

SITE ASSESSMENT REPORT  
INSTALLATION OF ONE ADDITIONAL  
GROUNDWATER MONITORING WELL AND SAMPLING  
OF ALL EXISTING WELLS

JAMUL-DULZURA SCHOOL DISTRICT  
TRANSPORTATION YARD  
14581 LYONS VALLEY ROAD  
JAMUL, CALIFORNIA  
DEH CASE NO. H03764-002

PROJECT NO. 267.1.18  
JANUARY 6, 2005

# HARGRAVE ENVIRONMENTAL CONSULTING, INC.

Project No. 267.1.18  
January 6, 2005

Site Assessment / Remediation

Mr. Jim LaChusa  
Jamul-Dulzura School District  
14581 Lyons Valley Road  
Jamul, California 91935

SUBJECT: SITE ASSESSMENT REPORT, INSTALLATION OF ONE  
ADDITIONAL GROUNDWATER MONITORING WELL AND SAMPLING  
OF ALL EXISTING WELLS, JAMUL-DULZURA SCHOOL  
DISTRICT TRANSPORTATION YARD, 14581 LYONS VALLEY  
ROAD, JAMUL, CALIFORNIA, DEH CASE No. H03764-002.

Reference: Workplan for Additional Site Assessment,  
Installation of One Groundwater Monitoring Well,  
Jamul-Dulzura School District Transportation Yard,  
14581 Lyons Valley Road, Jamul, California, DEH  
Case No. H03764-002, by HEC, dated August 30, 2004.


Dear Mr. LaChusa:

Hargrave Environmental Consulting, Inc. (HEC), is submitting the following report of the site assessment investigation conducted at the subject property. The completed work consisted of the drilling of one boring, conversion to groundwater monitoring well, and groundwater sampling of all existing groundwater monitoring and irrigation wells to more fully assess the impacts to groundwater quality from the former underground storage tank (UST).

If you have any questions or comments, please do not hesitate to contact our office.

Respectfully,

HARGRAVE ENVIRONMENTAL CONSULTING, INC.

  
CHUCK HARGRAVE  
President



GERALD I. SHILLER, R.G. 4558  
Registered Geologist



CH/bs

Distribution: (1) Addressee  
(1) Mr. Kent Huth, County of San Diego, DEH

Project No. 267.1.18  
January 6, 2005

## TABLE OF CONTENTS

<u>DESCRIPTION</u>	<u>PAGE</u>
INTRODUCTION.....	1
SITE DESCRIPTION.....	1
BACKGROUND.....	1
GEOLOGY/HYDROGEOLOGY.....	2
SITE CONCEPTUAL MODEL.....	3
MONITORING WELL INSTALLATION.....	5
GROUNDWATER MONITORING AND SAMPLING.....	5
DISPOSAL OF SOIL CUTTINGS AND WATER.....	6
SUMMARY OF LABORATORY ANALYSES.....	7
WELL SURVEY.....	7
GEOTRACKER SUBMITTAL.....	7
DISCUSSION OF DATA AND OBSERVATIONS.....	7
RECOMMENDATIONS.....	8
LIMITATIONS.....	8
REFERENCES.....	9

## TABLES

TABLE I:	WELL CONSTRUCTION DETAILS
TABLE II:	SUMMARY OF GROUNDWATER MONITORING DATA
TABLE III:	SUMMARY OF SOIL SAMPLE ANALYSES

## CHARTS

CHART I:	MW-1 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS
CHART II:	MW-2 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS
CHART III:	MW-3 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS
CHART IV:	MW-5 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS
CHART V:	MW-6 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS
CHART VI:	MW-7 GROUNDWATER TRENDS
CHART VII:	MW-8 GROUNDWATER TRENDS

## FIGURES

FIGURE NO. 1:	SITE LOCATION
FIGURE NO. 2:	SITE PLAN WITH GROUNDWATER CONDITIONS
FIGURE NO. 3:	EXCAVATION AREA
FIGURE NO. 4:	CROSS SECTION A-A'
FIGURE NO. 5:	CROSS SECTION B-B'
FIGURE NO. 6:	SITE PLAN WITH MTBE CONTOURS
FIGURE NO. 7:	BORING LOG
FIGURE NO. 8:	WELL CONSTRUCTION DETAIL

## APPENDICES

APPENDIX A: WELL PURGE DATA SHEET  
APPENDIX B: NON-HAZARDOUS WASTE DISPOSAL MANIFEST  
APPENDIX C: ANALYTICAL LABORATORY REPORTS AND CHAIN OF CUSTODY  
APPENDIX D: WELL SURVEY REPORT

Project No. 267.1.18  
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## INTRODUCTION

The purpose of this investigation was to complete the delineation of methyl-tertiary-butyl-ether (MTBE) impacts to groundwater and to perform groundwater monitoring and sampling at 14581 Lyons Valley Road, Jamul, California (see Figure No. 1, Site Location).

The present investigation included the drilling of one soil boring, conversion to a groundwater monitoring well, and sampling and analysis of all existing groundwater and irrigation wells. The work was performed under County of San Diego Drilling Permit No. LMON102716. This report presents a description of the site, a general background of the release, a summary of local geology and hydrogeology, a site conceptual model, a description of the field investigation, a summary of data and observations, and recommendations.

## SITE DESCRIPTION

The subject site is located at 14581 Lyons Valley Road, Jamul, California 91935, and the Assessor's Parcel Number (APN) is 596-152-21 (see Figure No. 1, Site Location). The site, approximately 130 feet by 250 feet, is the Jamul-Dulzura Union School District's transportation yard. The property is comprised of an asphalt paved yard where school buses and other school district vehicles are parked, and miscellaneous equipment is stored (see Figure No. 2, Site Plan with Groundwater Conditions). Site structures include a metal-sided maintenance shop and several buildings that contain school district offices. There is an elementary school adjacent to the west side of the transportation yard. There are also rural residential properties to the north of the site, across Lyons Valley Road, and to the east and south of the site. A small, intermittent creek lies just outside of the south side of the site.

## BACKGROUND

On December 1, 1998, one 1,000-gallon steel gasoline underground storage tank (UST) (tank #1), one 2,000-gallon fiberglass diesel UST (tank #2), and associated dispensing equipment were removed from the site. At the time of UST and equipment removal, the inspector noted three small holes in tank #1, as well as petroleum odors and discolored soil in the excavation. Backfill material was placed in the excavation following UST removal.

Laboratory analysis results from soil samples obtained beneath the former USTs and dispenser pad reportedly contained Total Petroleum Hydrocarbon (TPH) concentrations ranging from <10 parts per million

(ppm) to 190 ppm for gasoline (TPHg), and <10 ppm to 9,200 ppm for diesel (TPHd). Eight groundwater monitoring wells were installed at the subject site between August 3, 1999, and July 28, 2003. On November 25 and 26, 2002, three of the monitoring wells (MW-1, MW-2, and MW-3) were over-drilled and deepened to accommodate the decreasing groundwater levels observed at the site (see Table I, Well Construction Details).

From August 25 to September 1, 2000, a remedial soil excavation was performed at the site. A total of 1,590.59 tons of hydrocarbon affected soils were removed from the ground during the excavation and transported to a licensed treatment facility. Monitoring well MW-4 was destroyed during the excavation. Following the excavation, a quarterly groundwater monitoring and sampling program was initiated on November 1, 2000. For results of past groundwater monitoring events, see the referenced reports and Table II, Summary of Groundwater Monitoring Data.

The site was assigned a Class A priority for MTBE migration by the County of San Diego, Department of Environmental Health (DEH), and the California Regional Water Quality Control Board (CRWQCB) because there are active groundwater irrigation wells on-site. The Class A priority classification requires a fast-track approach to site assessment and mitigation activities. In December 2001, Hargrave Environmental Consulting, Inc. (HEC) conducted a sensitive receptor survey in the vicinity of the subject site. The survey identified 20 sensitive groundwater receptors (including the intermittent creek and irrigation wells) within a 2,250-foot radius of the subject site. Two off-site private wells are down-gradient from the site. However, the distance of these wells from the site is great enough for the risk of MTBE impacts reaching these wells to be relatively low.

#### GEOLOGY/HYDROGEOLOGY

Based on a review of the references, the site is underlain at depth by Mesozoic granitics of the southern California batholith. The materials observed during past drilling and excavating activities at the site consisted of topsoil and decomposed granitic soils. Topsoil generally consisted of brown, clayey sands that extended to depths of 0-5 feet below ground surface (bgs). Decomposed granitic materials generally consisted of reddish to olive brown, and gray, silty sands. As depth increased, the decomposed granite became less decomposed, to the point that boulders of weathered granite were present as shallow as 13 feet bgs.

Three active irrigation wells (I-1, I-2, and I-3), used for irrigation of playground areas at the school west of the transportation yard, are located within 275 feet of the UST excavation. One irrigation well is 40 feet northeast, one is 110 feet north northeast, and one is 275 feet southeast of the former tank excavation. Depending on atmospheric conditions, water for irrigation may be pumped from the wells as often as every other day. The locations of the wells are shown on Figure No. 2, Site Plan with Groundwater Conditions.

The subject site is located within the Jamul Hydrologic Subarea (10.33) of the Otay Hydrologic Unit. The CRWQCB has assigned beneficial use designation for groundwater in this subarea for municipal, agricultural, and industrial purposes, and the County of San Diego, DEH has categorized this site as a sensitive-groundwater-use site. Based on the groundwater depths measured during the most recent groundwater monitoring event on December 9, 2004, the groundwater gradient shows variable values ranging from 0.01 to 0.12 feet/foot generally to the southwest.

The CRWQCB has assigned beneficial use designation for surface waters in this subarea for municipal, agricultural, industrial, recreation, and wildlife habitat purposes. A small creek, which is a tributary of Jamul Creek, runs along the south and east sides of the school district property. The creek was dry during this field investigation, but sometimes has surface flows during the winter rainy season. Surface runoff from the school district site is toward the creek.

#### SITE CONCEPTUAL MODEL

Based on the information presented in previous site assessment reports, including soil sampling and analyses, and past groundwater monitoring events, the following model is presented.

An unauthorized release of gasoline was discovered at the subject site on December 1, 1998, when one 1,000-gallon steel gasoline UST (tank #1), one 2,000-gallon fiberglass diesel UST (tank #2), and associated dispensing equipment were removed from the site. As the fuel was leaking, impacts spread first to the tank backfill material, and subsequently to the surrounding and underlying native formational material. At some point, impacts from the soil migrated to the groundwater. As delineated by the existing groundwater monitoring wells, fuel impacts in the groundwater migrated to the southwest from the former USTs. The direction of migration of impacts to groundwater is consistent with the

groundwater gradient calculated for this site from monitoring data (see Figure No. 2, Site Plan with Groundwater Conditions).

A review of all laboratory results indicates that gasoline is the major, and perhaps only, contaminant present in the soil and groundwater samples obtained during site assessment investigations.

The lateral and vertical extent of hydrocarbon impacts to soil have been assessed. Approximately 1,590.59 tons of impacted soils with a TPH concentration greater than 100 ppm were excavated and removed from the site in September 2000. The limits of the excavation are presented on Figure No. 3, Excavation Area, Figure No. 4, Cross Section A-A', and Figure No. 5, Cross Section B-B'. Results of soil samples obtained during the interim soil excavation are presented on Table III, Summary of Soil Sample Analyses. No residual soil contamination with TPH concentrations greater than 100 ppm remain at the subject site.

Laboratory analysis results from groundwater samples obtained from the eight monitoring wells and three irrigation wells indicate there is an MTBE plume extending approximately 200 feet to the southwest of the former tank pit. There has been no indication during any of the past groundwater monitoring and sampling events that benzene, toluene, ethylbenzene, or xylenes (BTEX) are present in the groundwater at the subject site. MTBE impacts have been noted in the past from MW-1, MW-2, MW-3, MW-5, and MW-6 at concentrations up to 135 parts per billion (ppb), 33.9 ppb, 3,490 ppb, 5,390 ppb, and 421 ppb, respectively. The limits of MTBE impacts to groundwater from the most recent sampling event are presented on Figure No. 6, Site Plan with MTBE Contours. A summary of laboratory results from previous groundwater monitoring and sampling events is presented in Table II, Summary of Groundwater Monitoring Data. These results indicate that the extent of hydrocarbon impacts to groundwater has been generally assessed and that impacts are generally limited to the southern portion of the Jamul-Dulzura School property.

Concentrations of MTBE in the five monitoring wells (MW-1, MW-2, MW-3, MW-5, and MW-6) have been diminishing due to the previous remedial excavation of hydrocarbon-impacted soils, which removed the source of on-going impacts to groundwater quality. Charts I through V display groundwater trends and MTBE concentrations.

Past assessment also included searching for potential receptors within a 2,250 foot radius of the subject site. The results from this investigation identified a total of 20 potential sensitive



receptors within a 2,250-foot radius of the subject site (19 wells and 1 creek). Two of the off-site, private wells are down gradient from the school district site. Well W04952 is located approximately 1,800 feet west southwest of the site, and well number 1 (identified from the HEC field survey) is located approximately 2,100 feet south southeast of the site. The distance of these wells from the school district site is great enough to make the risk of MTBE impacts reaching these wells relatively low. Municipal water is supplied throughout the entire site vicinity by the Otay Water District.

The 3 irrigation wells on the school district property and the adjacent creek are within 300 feet of the former USTs. The potential for MTBE to impact irrigation wells is considered to be moderate to high because the frequent pumping of water from the wells during dry periods may accelerate MTBE migration from the former UST pit. However, since the source of the contamination has been removed the contamination trends in the groundwater have been decreasing. The potential for MTBE impacts to affect creek surface waters is considered to be low to moderate because impacted near-surface soils were removed and hauled away, and the groundwater level is 15-20 feet lower in elevation than the creek bed. One potentially sensitive human receptor, the elementary school, is located at the subject site. No other potentially sensitive human receptors were noted.

#### MONITORING WELL INSTALLATION

On November 23, 2004, an HEC geologist supervised the installation of groundwater monitoring well MW-9 under County of San Diego well permit number LMON102716. The monitoring well was drilled to approximately 45 feet bgs with a CME-75 drill rig equipped with 8-inch diameter hollow-stem auger, provided by Baja Exploration, Escondido, California. Groundwater was encountered during the drilling of the boring at a depth of 26 feet bgs. Detailed descriptions of the subsurface conditions encountered during drilling are presented in Figure No. 7, Boring Log and Figure No. 8, Well Construction Detail.

The monitoring well was constructed through the center of the hollow stem auger. Twenty feet of 0.02-inch slotted 2-inch PVC casing, followed by solid 2-inch casing to ground surface, were inserted into the borehole. The boring was backfilled with #3 Monterey sand from total depth to 2 feet above the top of the well screen as auger sections were removed from the borehole. A bentonite seal was added from the top of the sand to 3 feet bgs.

The well was completed at surface with a traffic-rated steel well cover set in concrete (see Figure No. 8, Well Construction Detail) and the well was developed with a surge block according to County of San Diego 2004 SA/M Manual guidelines.

#### GROUNDWATER MONITORING AND SAMPLING

On December 9, 2004, HEC representatives visited the site to monitor groundwater levels and to obtain groundwater samples for laboratory analyses from eight groundwater monitoring wells and three irrigation wells. The irrigation wells were reportedly last pumped on December 1, 2004.

Prior to the disturbance of liquids, an electronic water level indicator was used to measure the groundwater depth in each of the monitoring wells. Groundwater depth measurements are summarized in Table II, Summary of Groundwater Monitoring Data, and on Figure No. 2, Site Plan With Groundwater Conditions.

Purging of groundwater monitoring wells was conducted in accordance with the groundwater sampling requirements presented in the DEH Site Assessment and Mitigation (SA/M) Manual, dated February 2004. Monitoring and purging data are included in Appendix A, Well Purge Data Sheet. After the groundwater depths were measured, monitoring wells MW-1 through MW-3, and MW-5 through MW-9 were purged with a clean 2-inch PVC bailer prior to sampling. Groundwater recovery rates after purging were fast within all eight wells with recovery to 80% of static condition occurring in less than two hours. Temperature, pH, and specific conductance (total dissolved solids) were measured, after one borehole volume of groundwater was removed from each well. An additional half borehole volume of groundwater was then removed, and temperature, pH, and specific conductance were measured again. The second set of temperature, pH, and specific conductance measurements were within 10% of the first set; therefore, purging was limited to one and a half borehole volumes.

Prior to the disturbance of liquids, an electronic water level indicator was used to measure the groundwater depth in each of the irrigation wells. The pumps in the three irrigation wells were then turned on, and water was pumped into the holding tanks for eleven minutes prior to sampling. Approximately 143 gallons was pumped from I-1, 88 gallons from I-2, and 121 gallons from I-3. Groundwater recovery rates after purging were fast within the three irrigation wells with recovery to 80% of static condition occurring in less than two hours.

Groundwater samples were obtained from the eight monitoring wells and three irrigation wells using new, factory sealed, disposable bailers. Each groundwater sample was collected into 40-milliliter (ml) glass vials, which were filled by opening the bottom discharge valve in the bailer. The vials were immediately sealed with Teflon-lined plastic caps, labeled, and checked for headspace. No headspace was observed in any of the vials. The samples were placed in an ice chest with blue ice and delivered to a state-certified, fixed laboratory for analysis. All groundwater purging and sampling equipment was washed thoroughly with a trisodium phosphate and water solution and rinsed twice with potable water between uses.

#### DISPOSAL OF SOIL CUTTINGS AND WATER

All soil cuttings and purge water generated during this investigation were sealed in six 55-gallon 17-H DOT-approved drums, which were labeled and placed inside the perimeter fence. The drums of soil and water were reportedly picked up for disposal the week of December 20, 2004. Disposal certification from this investigation will be submitted under separate cover. Three drums of purge water from previous investigations were picked up on April 9, 2004 by EFR Environmental, and disposed at Dome Rock Industries, Quartzite, AZ. Disposal verification is presented in Appendix B, Non-Hazardous Waste Disposal Manifest.

#### SUMMARY OF LABORATORY ANALYSES

Groundwater samples were analyzed for TPH gasoline (TPHg) by EPA Method 8015 Modified and for benzene, toluene, ethylbenzene, xylenes (BTEX), MTBE, and the oxygenates di-isopropyl ether (DIPE), tertiary amyl methyl ether (TAME), ethyl tertiary butyl ether (ETBE), and tertiary butyl alcohol (TBA) by EPA Method 8260B. Laboratory results are presented in Table II, Summary of Groundwater Monitoring Data. Chain of Custody forms and complete laboratory reports prepared by American Environmental Testing Laboratory, Inc. (AETL), Burbank, California are presented in Appendix C, Analytical Laboratory Reports and Chain of Custody.

#### WELL SURVEY

On December 15, 2004, groundwater monitoring well MW-9 was surveyed for horizontal position and elevation by Hirsch and Company, a licensed surveyor (see Appendix D, Well Survey Report).

#### GEOTRACKER SUBMITTAL

In accordance with Assembly Bill 2886 (AB2886), on December 27, 2004 the data obtained from the well survey, a current site map, and the groundwater level monitoring and sampling data from the current investigation were submitted to the State Water Resources Control Board (SWRCB) GeoTracker system.

#### DISCUSSION OF DATA AND OBSERVATIONS

On December 9, 2004, groundwater depths were measured in the eight monitoring wells at 28.58 to 32.76 feet below top of well casing (TOC), and in irrigation wells I-1 (83.18 feet), I-2 (33.02 feet), and I-3 (64.08 feet) below well rim. The monitoring well depths were used to calculate groundwater elevations of 1115.32 to 1119.65 feet above mean sea level (MSL). Based on the groundwater depths measured in the monitoring wells on December 9, 2004, the groundwater gradient shows variable values ranging from 0.001 to 0.12, generally to the southwest. This variability may be due to changes in porosity or permeability in the underlying bedrock, including degree of weathering and the presence or absence of fractures. The water depth in MW-9, the new monitoring well, does help to show that the groundwater flow does not turn to the northwest as had been suggested in some of the previous monitoring data (see Figure No. 2, Site Plan with Groundwater Conditions).

TPHg was detected in monitoring wells MW-1 (0.058 ppm), MW-3 (0.623 ppm), MW-5 (0.541 ppm) and MW-6 (0.024 ppm). TPHg concentrations increased by 0.009 ppm in MW-1, and by 0.285 ppm in MW-5 from the previous sampling event in March 2004. TPHg concentrations decreased by at least 0.009 ppm in MW-2, by 0.142 ppm in MW-3, and by 0.022 ppm in MW-6 from the previous sampling event in March 2004. TPHg was not detected in any of the other monitoring wells or irrigation wells above a method detection limit (MDL) of 0.005 ppm.

BTEX was not detected at or above the respective MDLs in any of the groundwater samples. MTBE was detected in MW-1 at 71.2 ppb, MW-2 at 1.4 ppb, MW-3 at 931 ppb, MW-5 at 677 ppb, and in MW-6 at 22.5 ppb. MTBE concentrations increased by 29.1 ppb in MW-1, by 123 ppb in MW-3, and by 330 ppb in MW-5 since the March 2004 sampling event. MTBE concentrations decreased by 10.2 ppb in MW-2, and by 13.8ppb in MW-6, since the March 2004 sampling event. MW-3 also contained TAME (8.1 ppb) and ETBE (1.2 ppb). MW-5 contained TBA (17.3 ppb), TAME (3.8 ppb), and ETBE (0.7J ppb). None of the groundwater samples contained detectable concentrations of any of the other analyzed constituents above the respective MDLs (see Table II, Summary of Groundwater Monitoring Data). Overall, MTBE

concentrations have decreased since completion of the selective soil removal in late 2000. Trends in groundwater depths and MTBE concentrations over time for the monitoring wells are presented graphically on Charts I through Chart VII. Current MTBE concentrations are presented on Figure No. 6, Site Plan with MTBE Contours.

#### RECOMMENDATIONS

1. The eight existing groundwater monitoring wells and three irrigation wells should be monitored and sampled until the zone of impacts to groundwater can be shown to be stable and/or decreasing to a satisfactory level. A Corrective Action Plan (CAP) should then be prepared to recommend case closure based on natural attenuation. If the zone of impacts is not stable, then the CAP should be prepared to discuss mitigation alternatives.

#### LIMITATIONS

The contents of this report are based on the following:

1. The samples obtained during our subsurface exploration;
2. The observations of our field personnel during the field activities;
3. The results of laboratory tests performed by AETL, Burbank, California;
4. Information obtained from San Diego County and State regulatory agencies; and
5. Reference documents.

Variations in soil conditions could exist beyond the points explored in this investigation. Also, changes in groundwater conditions could occur at some time in the future due to variations in temperature, regional rainfall and other factors.

The services performed by HEC have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the southern California area. No other warranty, expressed or implied, is made.

REFERENCES

1. County of San Diego, Department of Environmental Health, 2004, Site Assessment and Mitigation Manual, dated February 2004.
2. County of San Diego, Department of Environmental Health, 1998, Hazardous Materials Management Division Underground Tank Removal/Closure Report, Establishment #H03764, Dulzura Union School District, 14581 Lyons Valley Road, dated January 5, 1999.
3. County of San Diego, Department of Environmental Health, 1999, Workplan Approval, Unauthorized Release #H03764-002, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, dated May 27, 1999.
4. Hargrave Environmental Consulting, 1999, Site Assessment Investigation - Drill, Install and Sample Four Soil Borings and Three Groundwater Monitoring Wells, and Associated Tasks, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, California, DEH Case No. H03764-002, dated December 1, 1999.
5. Hargrave Environmental Consulting, 2000a, Site Assessment Investigation - Drill, Install and Sample Two Soil Borings and Two Groundwater Monitoring Wells, and Associated Tasks, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, California, DEH Case No. H03764-002, dated May 12, 2000.
6. Hargrave Environmental Consulting, Inc., 2000b, Report of Environmental Site Assessment Investigation, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated September 7, 2000.
7. Hargrave Environmental Consulting, Inc., 2000c, Report of Interim Remedial Action, Excavation of Hydrocarbon Impacted Soils, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated September 29, 2000.
8. Hargrave Environmental Consulting, Inc., 2000d, Report of First Quarterly Groundwater Monitoring and Sampling Following Excavation of Hydrocarbon Impacted Soils, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated December 11, 2000.
9. Hargrave Environmental Consulting Inc., 2001a, Report of

Second Quarterly Groundwater Monitoring and Sampling, 11/1/00 to 2/5/01, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated February 20, 2001.

10. Hargrave Environmental Consulting, Inc., 2001b, Report of Third Quarterly Groundwater Monitoring and Sampling, 2/6/01 to 5/18/01, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated June 8, 2001.
11. Hargrave Environmental Consulting, Inc., 2001c, Report of Fourth Quarterly Groundwater Monitoring and Sampling, 5/19/01 to 8/24/01, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated September 17, 2001.
12. Hargrave Environmental Consulting, Inc., 2002a, Report of Fifth Quarterly Groundwater Monitoring and Sampling, 8/25/01 to 12/7/01, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated January 2, 2002.
13. Hargrave Environmental Consulting, Inc., 2002b, Addendum to Report of Interim Remedial Action, Report of Sensitive Receptor Survey, Jamul-Dulzura Union School District Transportation Yard, 14581 Lyons Valley Road, Jamul, California, DEH File No. H03764-002, dated January 7, 2002.
14. Hargrave Environmental Consulting, Inc., 2002c, Report of Sixth Quarterly Groundwater Monitoring and Sampling, 12/8/01 to 3/6/02, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated April 18, 2002.
15. Hargrave Environmental Consulting, Inc., 2002d, Report of Seventh Quarterly Groundwater Monitoring and Sampling, 3/7/02 to 9/27/02, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated November 4, 2002.
16. Hargrave Environmental Consulting, Inc., 2003a, Site Assessment Report - Deepening Three Existing Groundwater Monitoring Wells, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002,

dated January 13, 2003.

17. Hargrave Environmental Consulting, Inc., 2003b, Report of Eighth Quarterly Groundwater Monitoring and Sampling, 9/28/02 to 3/19/03, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated April 14, 2003.
18. Hargrave Environmental Consulting, Inc., 2003c, Site Assessment Report, Installation and Sampling of One Additional Groundwater Monitoring Well, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated August 27, 2003.
19. Hargrave Environmental Consulting, Inc., 2003d, Report of Ninth Quarterly Groundwater Monitoring and Sampling, 3/20/03 to 9/10/03, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated October 6, 2003.
20. Hargrave Environmental Consulting, Inc., 2004, Report of Tenth Quarterly Groundwater Monitoring and Sampling, 9/11/03 to 3/23/04, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, Jamul, California, DEH Case No. H03764-002, dated April 16, 2004.
21. Secor International, Inc., 1999, Work Plan for Site Assessment, Jamul-Dulzura Union School District, 14581 Lyons Valley Road, California, dated May 10, 1999.



**TABLE I**  
WELL CONSTRUCTION DETAILS

WELL DETAILS	MW-1#	MW-2#	MW-3#	MW-4*	MW-5	MW-6	MW-7	MW-8	MW-9	I-1	I-2	I-3
TOTAL DEPTH	44	44	47	35	35	40	40	43	45	240	80	420
CASING DIAMETER	2 in	2 in	2 in	2 in	2 in	2 in	2 in	2 in	2 in	-	-	-
WELL SCREEN	24-44	24-44	27-47	15-35	15-35	10-40	10-40	23-43	25-45	-	-	-
SOLID CASING	0-24	0-24	0-27	0-15	0-15	0-10	0-10	0-23	0-25	-	-	-
GRAVEL PACK (#3 SAND)	22-44	22-44	24-47	12-35	13-35	8-40	8-40	21-43	23-45	-	-	-
BENTONITE SEAL	3-22	3-22	3-24	2-12	2-13	2-8	2-8	3-21	3-23	-	-	-
SURFACE SEAL (CONCRETE)	0-3	0-3	0-3	0-2	0-2	0-2	0-2	0-3	0-3	-	-	-
DATE COMPLETED	11/26/02	11/26/02	11/26/02	04/04/00	04/04/00	08/08/00	08/08/00	07/28/03	11/23/04	-	-	-

\* Well destroyed on 8/28/00  
# Wells deepened on 11/26/02  
- = not applicable/not known

**TABLE II**  
SUMMARY OF GROUNDWATER MONITORING DATA

WELL ID	DATE SAMPLED	GW DEPTH	GW ELEVATION (ft above MSL)	TPHg (ppm)	TPHd (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL-BENZENE (ppb)	XYLENES (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	TBA (ppb)	MTBE (ppb)
MW-1  (1147.30) *  (1147.37) *	08/06/99	25.12	1132.38#	<0.050	<500	<0.3	<0.3	<0.3	<0.6	-	-	-	-	135
	10/29/99	28.41	1129.09#	<0.050	<500	<0.3	<0.3	<0.3	<0.6	-	-	-	-	50.5
	04/13/00	27.91	1129.59#	0.125	<500	<0.5	<0.5	<0.5	<1.0	-	-	-	-	117
	11/01/00	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	02/05/01	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	05/18/01	28.02	1129.48#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	128
	08/24/01	31.12	1126.38#	-	-	-	-	-	-	-	-	-	-	-
	12/07/01	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	03/06/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	09/27/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	12/05/02	36.24	1111.13	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	18.0
	03/19/03	32.60	1114.77	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	55.9	14.2
	07/31/03	33.62	1113.75	-	-	-	-	-	-	-	-	-	-	-
	09/10/03	34.64	1112.73	0.024	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	60.0
	03/23/04	33.22	1114.15	0.049	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	42.1
	12/09/04	31.17	1116.20	0.058	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	71.2
MW-2  (1149.78) *  (1149.54) *	10/29/99	30.49	1129.51#	<0.050	<500	<0.3	<0.3	<0.3	<0.6	-	-	-	-	<2.0
	04/13/00	29.92	1130.08#	0.040	<500	<0.5	<0.5	<0.5	<1.0	-	-	-	-	33.9
	11/01/00	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	02/05/01	34.31	1125.69#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	1.7
	05/18/01	29.76	1130.24#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	10.2
	08/24/01	34.25	1125.75#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	9.0
	12/07/01	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	03/06/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	09/27/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	12/05/02	38.12	1111.42	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	2.6
	03/19/03	33.75	1115.79	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	0.7J
	07/31/03	35.31	1114.23	-	-	-	-	-	-	-	-	-	-	-
	09/10/03	36.35	1113.19	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	0.7J
	03/23/04	34.86	1114.68	0.014	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	11.6
	12/09/04	32.42	1117.12	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	1.4
MW-3	10/12/99	30.36	1129.44#	<0.050	<500	0.3	<0.3	<0.3	<0.6	-	-	-	-	221
	04/13/00	29.82	1130.13#	2.93	<500	<0.5	<0.5	<0.5	<1.0	-	-	-	-	2,670
	11/01/00	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	02/05/01	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-

**TABLE II**  
SUMMARY OF GROUNDWATER MONITORING DATA

WELL ID	DATE SAMPLED	GW DEPTH	GW ELEVATION (ft above MSL)	TPHg (ppm)	TPHd (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL-BENZENE (ppb)	XYLENES (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	TBA (ppb)	MTBE (ppb)
(1149.55) *	05/18/01	29.31	1130.64#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	6.4	31.8	<50	3,490
	08/24/01	33.99	1125.70#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	4.7	8.2	<50	1,840
	12/07/01	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	03/06/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	09/27/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	12/05/02	38.20	1111.3	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	1.4	15.2	279	1,610
	03/19/03	34.08	1115.42	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	1.1	11.4	6,030	1,500
	07/31/03	35.36	1114.14	-	-	-	-	-	-	-	-	-	-	-
	09/10/03	36.36	1113.14	0.394	-	<0.5	<0.5	<0.5	<1.0	<0.5	1.4	7.7	55.0	1,270
	03/23/04	34.90	1114.60	0.765	-	<0.5	<0.5	<0.5	<1.0	<0.5	0.8J	4.5	288	808
	12/09/04	32.76	1116.74	0.623	-	<0.5	<0.5	<0.5	<1.0	<0.5	1.2	8.1	<10	931
MW-4	04/13/00	28.61	1129.72#	245	<500	<0.5	<0.5	<0.5	<1.0	-	-	-	-	217
(1147.37) *	04/13/00	28.20	1129.40#	5.68	<500	<0.5	<0.5	<0.5	<1.0	-	-	-	-	5,390
	11/01/00	33.43	1124.17#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	6.1	<50	1,230
	02/05/01	32.12	1125.48#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	4.4	<50	796
	05/18/01	28.28	1129.32#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	8.5	<50	1,140
	08/24/01	32.42	1125.18#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	3.9	<50	970
	12/07/01	34.12	1123.48#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	2.1	<50	690
	03/06/02	33.23	1,114.14	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	2.7	<10	695
	09/27/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	12/05/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	03/19/03	32.75	1,114.62	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	1.5	709	180
	07/31/03	33.72	1,113.65	-	-	-	-	-	-	-	-	-	-	-
	09/10/03	34.71	1,112.66	-	-	-	-	-	-	-	-	-	-	-
	03/23/04	33.31	1,114.06	0.256	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	0.9J	49.0J	347
	12/09/04	31.44	1,115.93	0.541	-	<0.5	<0.5	<0.5	<1.0	<0.5	0.7J	3.8	17.3J	677
MW-6	08/14/00	30.78	1124.50#	0.199	<500	<0.5	<0.5	<0.5	<1.5	-	-	-	-	315
(1145.07) *	11/01/00	31.52	1123.76#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	1.6	<50	421
	02/05/01	30.05	1125.23#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	1.0	<50	266
	05/18/01	26.63	1128.65#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	142
	08/24/01	30.70	1124.58#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	1.1	<50	288
	12/07/01	32.19	1123.09#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	265
	03/06/02	31.26	1,113.81	-	-	<0.5	0.5J	<0.5	<1.0	<0.5	<0.5	1.0	<10	300
	09/27/02	34.07	1,111.00	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	163
	12/05/02	34.31	1,110.76	-	-	-	-	-	-	-	-	-	-	-

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SUMMARY OF GROUNDWATER MONITORING DATA

WELL ID	DATE SAMPLED	GW DEPTH	GW ELEVATION (ft above MSL)	TPHg (ppm)	TPHd (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL-BENZENE (ppb)	XYLENES (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	TBA (ppb)	MTBE (ppb)
	03/19/03	30.87	1,114.20	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	216	57.2
	07/31/03	31.99	1,113.08	-	-	-	-	-	-	-	-	-	-	-
	09/10/03	32.93	1,112.14	0.041	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	107
	03/23/04	31.51	1,113.56	0.046	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	36.3
	12/09/04	29.85	1,115.22	0.024	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	22.5
MW-7  (1149.29) *	08/14/00	36.93	1122.58#	<0.005	<500	<0.5	<0.5	<0.5	<1.5	-	-	-	-	<0.5
	11/01/00	38.07	1121.44#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	02/05/01	35.22	1124.29#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	05/18/01	17.37	1142.14#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	08/24/01	31.23	1128.28#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	12/07/01	35.48	1124.03#	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	03/06/02	31.18	1,118.11	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	09/27/02	39.17	1,110.12	-	-	<0.5	<0.5	0.8J	2.8	<0.5	<0.5	<0.5	<10	<0.5
	12/05/02	NO GW	NO GW	-	-	-	-	-	-	-	-	-	-	-
	03/19/03	30.03	1,119.26	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	07/31/03	34.91	1,114.38	-	-	-	-	-	-	-	-	-	-	-
	09/10/03	33.55	1,115.74	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	03/23/04	28.65	1,120.64	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	12/09/04	29.64	1,119.65	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
MW-8 (1143.90) *	07/31/03	30.59	1,113.31	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	09/10/03	31.57	1,112.33	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	03/23/04	30.10	1,113.80	<0.005	-	1.0	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	12/09/04	28.58	1,115.32	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
MW-8														
MW-9 (1145.73) *	12/09/04	30.03	1,115.70	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
I-1  (1152.48) *	06/09/00	NM	NM	<0.010	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	11/01/00	NM	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	02/05/01	NM	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	05/18/01	38.48	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	08/24/01	78.62	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	12/07/01	52.31	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	03/06/02	36.80	1,115.68	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	09/27/02	>200ft	NA	-	-	<0.5	<0.5	<0.5	2.8	<0.5	<0.5	<0.5	<10	<0.5
	03/19/03	36.41	1,116.07	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5

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SUMMARY OF GROUNDWATER MONITORING DATA

WELL ID	DATE SAMPLED	GW DEPTH	GW ELEVATION (ft above MSL)	TPHg (ppm)	TPHd (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL- BENZENE (ppb)	XYLENES (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	TBA (ppb)	MTBE (ppb)
	07/31/03	>200ft	NA	-	-	-	-	-	-	-	-	-	-	-
	09/10/03	103.82	1,048.66	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	03/23/04	96.28	1,056.20	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	09/10/04	83.18	1,069.30	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
I-2	06/09/00	NM	NM	<0.010	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	11/01/00	NM	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	02/05/01	NM	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	05/18/01	19.65	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	08/24/01	37.06	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	12/07/01	38.64	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
(1155.18) *	03/06/02	34.92	1120.26	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	09/27/02	42.88	1112.30	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	03/19/03	34.04	1121.14	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	07/31/03	42.87	1112.31	-	-	-	-	-	-	-	-	-	-	-
	09/10/03	36.03	1119.15	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	03/23/04	31.95	1123.23	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	12/09/04	33.02	1122.16	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
I-3	06/09/00	NM	NM	0.017	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	11/01/00	NM	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
I-3	02/05/01	NM	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	05/18/01	26.54	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	08/24/01	59.25	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
	12/07/01	37.50	NM	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<50	<0.5
(1142.31) *	03/06/02	33.85	1108.46	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	09/27/02	>200ft	NA	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<30	<0.5
	03/19/03	33.35	1108.96	-	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	07/31/03	>200ft	NA	-	-	-	-	-	-	-	-	-	-	-
	09/10/03	85.02	1057.29	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	03/23/04	77.85	1064.46	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5
	12/09/04	64.08	1078.23	<0.005	-	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10	<0.5

- = Not Analyzed

\* = Elevation of top of well casing (TOC) in feet above mean sea level (MSL) surveyed 3/29/02, 12/5/02, 8/4/03 and 12/15/04 by Hirsch & Company, a licensed surveyor. Elevation of irrigation wells is from rim of well head.

**TABLE II**  
 SUMMARY OF GROUNDWATER MONITORING DATA

WELL ID	DATE SAMPLED	GW DEPTH	GW ELEVATION (ft above MSL)	TPHg (ppm)	TPHd (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL- BENZENE (ppb)	XYLENES (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	TBA (ppb)	MTBE (ppb)
------------	-----------------	----------	-----------------------------------	---------------	---------------	------------------	------------------	----------------------------	------------------	---------------	---------------	---------------	--------------	---------------

# = Groundwater elevation in feet relative to a temporary benchmark.

NM = Not Measured

NA = Not Applicable

**TABLE III**  
SUMMARY OF SOIL SAMPLE ANALYSES

SAMPLE I.D.	TPH-G (ppm)	TPH-D (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)	MTBE (ppb)
<b>12/1/1998</b>							
T2S-14	11.0	29.0	-	-	-	-	-
T2N-14	62.0	9,200	-	-	-	-	-
T1S-14	190.0	<10	-	-	-	-	-
T1N-14	<10	<10	-	-	-	-	-
D1	94.0	650.0	-	-	-	-	-
<b>8/3/1999</b>							
B-1, S-10	<1.0	<10	<5	<5	<10	<5	99
B-1, S-13	<1.0	<10	<5	<5	<10	<5	52
B-2, S-7.5	2.9	7,020	7	10	220	41	<20
B-2, S-10.5	4.0	3,270	<5	<5	119	225	<20
B-3, S-10	<1.0	<10	<5	<5	<5	<10	<20
B-3, S-14	<1.0	<10	<5	<5	<5	<10	<20
MW-1, S-7.5	<1.0	<10	<5	<5	<5	<10	<20
MW-1, S-10.5	<1.0	115	<5	<5	<5	<10	<20
MW-1, S-15	<1.0	<10	<5	<5	<5	<10	<20
MW-1, S-20	<1.0	60	<5	<5	<5	<10	<20
MW-1, S-25	<1.0	<10	<5	<5	<5	<10	<20
HA-1, S-2	<1.0	<10	<5	<5	<5	<10	<20
<b>10/25/1999</b>							
MW-2, S-15	<1.0	<10	<5	<5	<5	<10	<20
MW-2, S-20	<1.0	<10	<5	<5	<5	<10	<20
MW-2, S-25	<1.0	<10	<5	<5	<5	<10	<20
MW-2, S-30	<1.0	<10	<5	<5	<5	<10	<20
MW-2, S-35	<1.0	<10	<5	<5	<5	<10	<20
MW-3, S-15	<1.0	16	<5	<5	<5	<10	90
MW-3, S-20	<1.0	<10	<5	<5	<5	<10	<20
MW-3, S-25	<1.0	<10	<5	<5	<5	<10	<20
MW-3, S-30	<1.0	<10	<5	<5	<5	<10	<20
MW-3, S-35	<1.0	<10	<5	<5	<5	<10	<20
<b>4/4/2000</b>							
MW-4,5	2.1	3,060	<5	11.2	92.4	220	15.2
MW-4,10	5.7	10,200	<5	26	21.8	62.6	84
MW-4,15	<1.0	<10	<5	<5	<5	<10	25.2
MW-4,20	<1.0	<10	<5	<5	<5	<10	<10
MW-4,25	<1.0	<10	<5	<5	<5	<10	<10
MW-4,30	<1.0	<10	<5	<5	<5	<10	<10
MW-4,35	<1.0	<10	<5	<5	<5	<10	<10
MW-5,5	<1.0	55	<5	<5	<5	<10	<10
MW-5,10	<1.0	<10	<5	<5	<5	<10	<10
MW-5,15	<1.0	<10	<5	<5	<5	<10	22
MW-5,20	<1.0	<10	<5	<5	<5	<10	<10
MW-5,25	<1.0	<10	<5	<5	<5	<10	<10
MW-5,30	<1.0	<10	<5	<5	<5	<10	68.6
MW-5,35	<1.0	<10	<5	<5	<5	<10	<10
B-4,5	<1.0	<10	<5	<5	<5	<5	<10

**TABLE III**  
SUMMARY OF SOIL SAMPLE ANALYSES

SAMPLE I.D.	TPH-G (ppm)	TPH-D (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)	MTBE (ppb)
B-4,10	2.2	1,050	<5	10	10	80	288
B-4,15	<1.0	<10	<5	<5	<5	<10	52
B-4,20	<1.0	<10	<5	<5	<5	<10	71
B-4,25	<1.0	<10	<5	<5	<5	<10	<10
B-4,30	<1.0	<10	<5	<5	<5	<10	<10
B-5,18	3.9	2,490	63.2	100	67.6	180	30
B-5,23	<1.0	<10	<5	<5	<5	<10	<10
B-5,28	<1.0	<10	<5	<5	<5	<10	29
B-5,33	<1.0	<10	<5	<5	<5	<10	76
B-5,38	<1.0	<10	<5	<5	<5	<10	<10
<b>8/8/2000</b>							
MW-6,28	<1.0	<10	<5	<5	<5	<10	<10
MW-7,29	<1.0	<10	<5	<5	<5	<10	<10
B-6,5	<1.0	<10	<5	<5	<5	<10	<10
B-6,10	<1.0	<10	<5	<5	<5	<10	<10
B-6,15	<1.0	<10	<5	<5	<5	<10	<10
B-6,20	<1.0	<10	<5	<5	<5	<10	<10
B-6,25	<1.0	<10	<5	<5	<5	<10	<10
B-6,30	<1.0	<10	<5	<5	<5	<10	<10
B-6,35	<1.0	<10	<5	<5	<5	<10	<10
B-6,40	<1.0	<10	<5	<5	<5	<10	<10
<b>Excavation</b>							
S-1, 21'	ND	ND	-	-	-	-	-
S-2, 21'	ND	ND	-	-	-	-	-
S-3, 20'	ND	ND	-	-	-	-	-
S-4, 12'	ND	2,200	ND	45	130	96	13
S-5, 13'	ND	ND	-	-	-	-	-
S-6, 13'	ND	370	ND	ND	ND	13	19
S-7, 13'	ND	ND	-	-	-	-	-
S-8, 20'	ND	ND	-	-	-	-	-
S-9, 20'	ND	ND	-	-	-	-	-
S-10, 21'	ND	ND	-	-	-	-	-
S-11, 21'	ND	ND	-	-	-	-	-
S-12, 21'	ND	ND	-	-	-	-	-
S-13, 14'	ND	ND	-	-	-	-	-
S-14, 10'	ND	ND	-	-	-	-	-
S-15, 20'	ND	ND	-	-	-	-	-
S-16, 21'	ND	ND	ND	ND	ND	ND	ND
S-17, 21'	ND	ND	-	-	-	-	-
S-18, 20'	ND	ND	-	-	-	-	-
S-19, 17.5'	ND	ND	-	-	-	-	-
S-20, 10'	ND	ND	-	-	-	-	-
S-21, 12'	ND	ND	-	-	-	-	-
S-22, 9'	ND	ND	-	-	-	-	-
S-23, 17'	ND	ND	-	-	-	-	-
S-24, 20'	ND	ND	-	-	-	-	-



**TABLE III**  
SUMMARY OF SOIL SAMPLE ANALYSES

SAMPLE I.D.	TPH-G (ppm)	TPH-D (ppm)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)	MTBE (ppb)
S-25, 6.5'	ND	8,800	-	-	-	-	-
S-26, 12'	ND	13,000	11	ND	24	ND	62
S-27, 11'	ND	ND	-	-	-	-	-
S-28, 9.5'	ND	ND	-	-	-	-	-
S-30, 12'	ND	ND	-	-	-	-	-

- = Not Analyzed

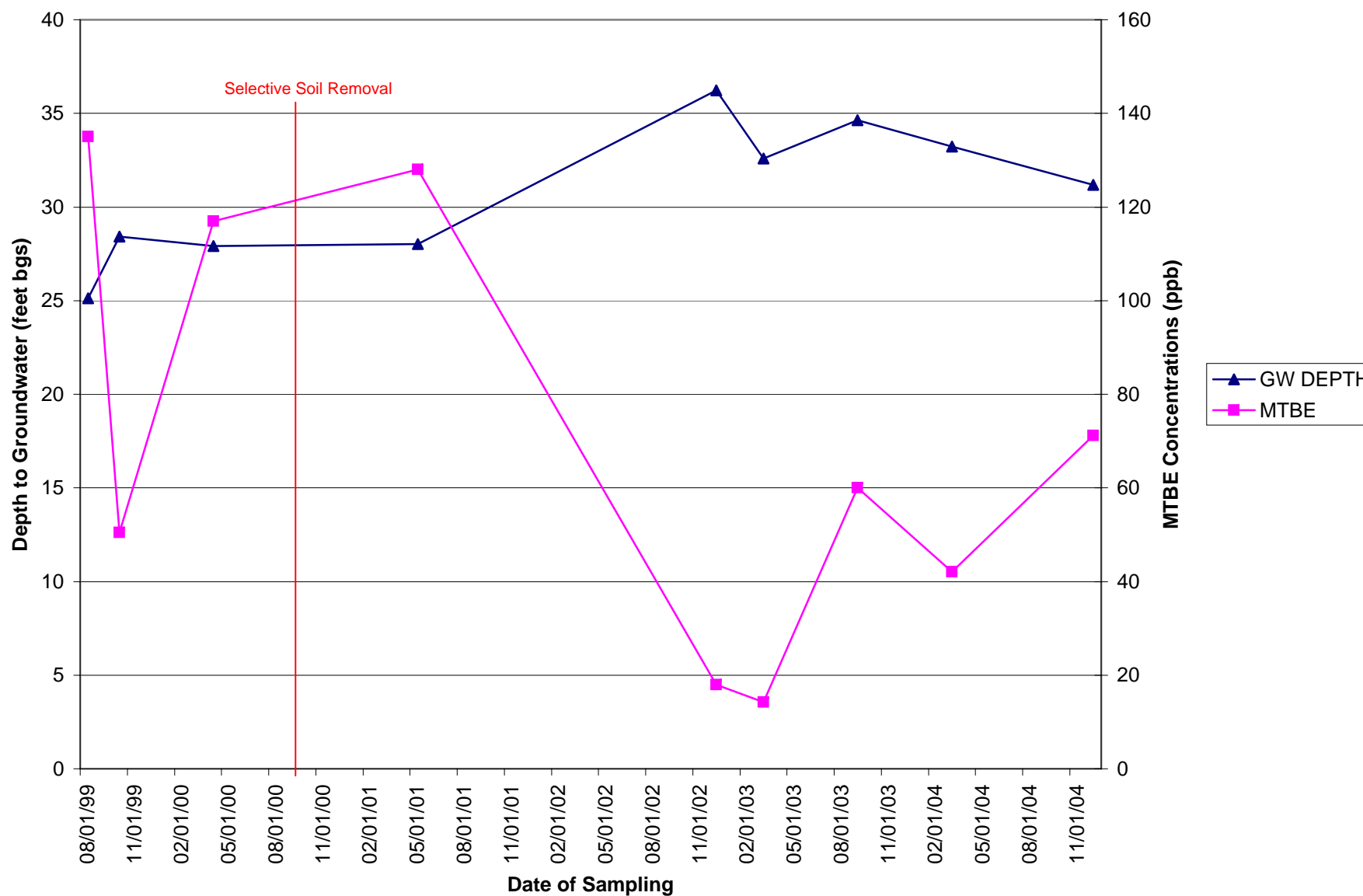
TPH-G and TPH-D analyzed by EPA Method 8015

BTEX and MTBE analyzed by EPA Method 8020

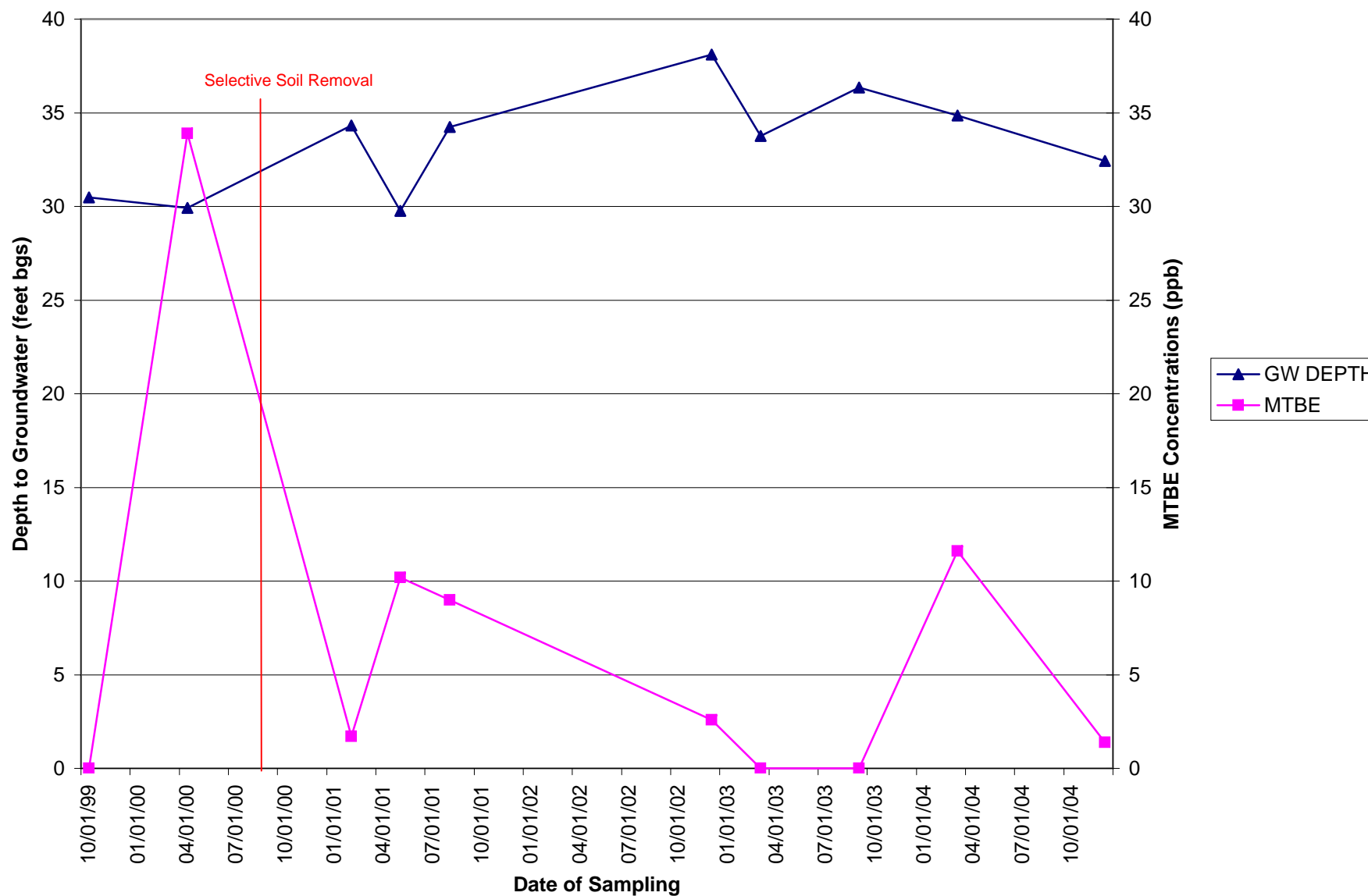
MTBE confirmation by EPA 8260

All laboratory analysis performed by HP Labs, Escondido and Solana Beach, California

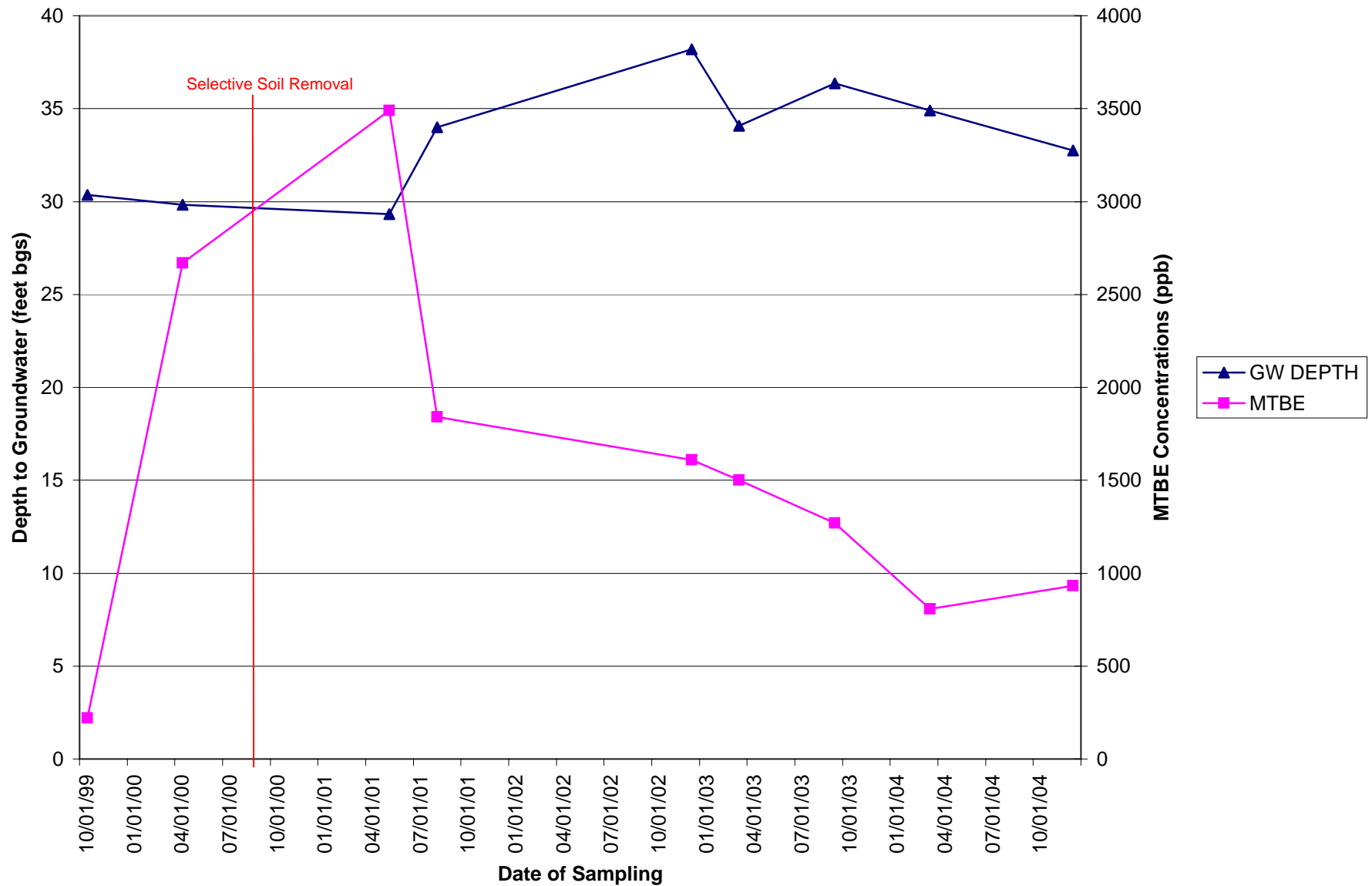
**CHART I**  
MW-1 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS



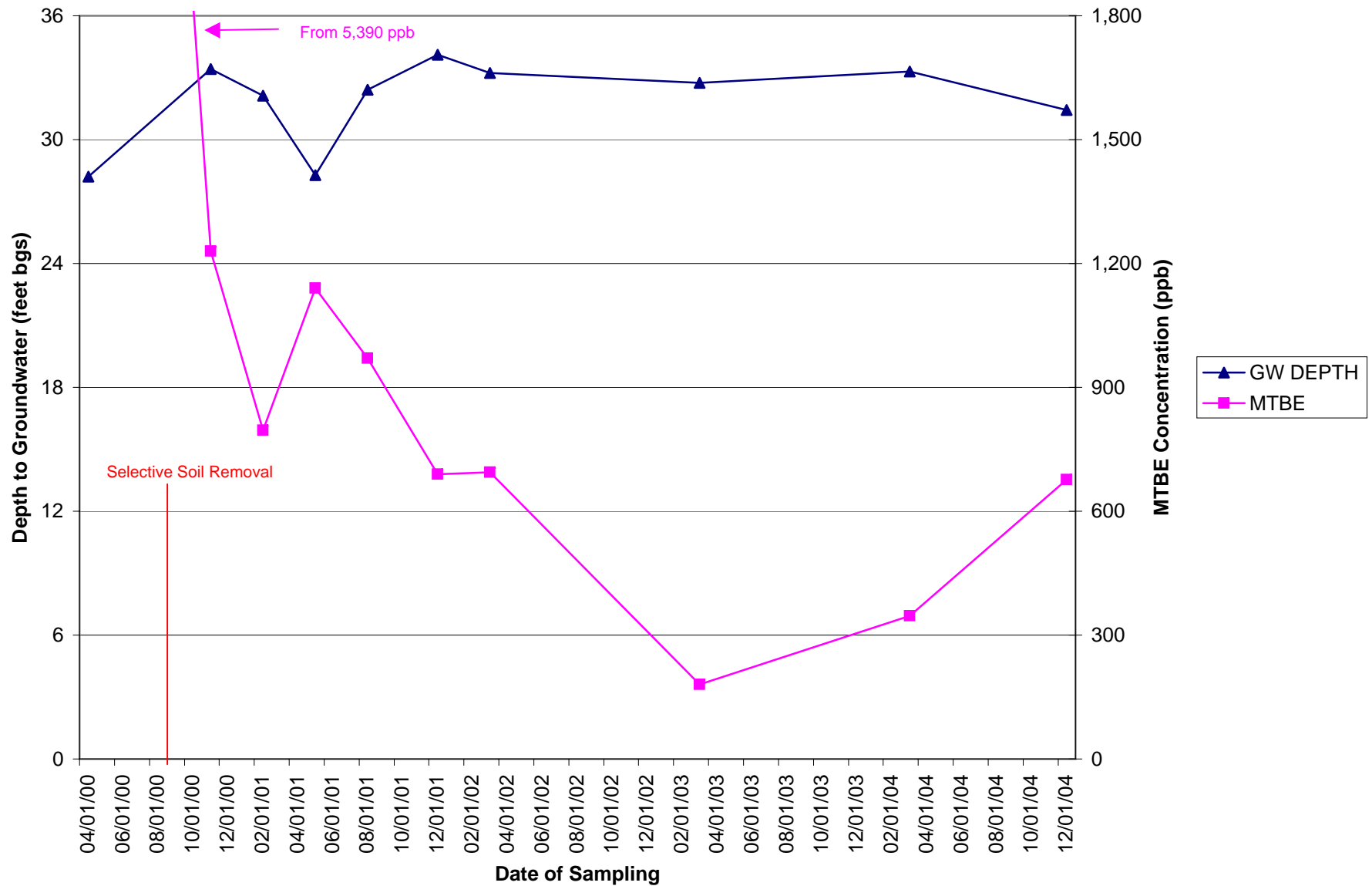
**CHART II**  
MW-2 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS



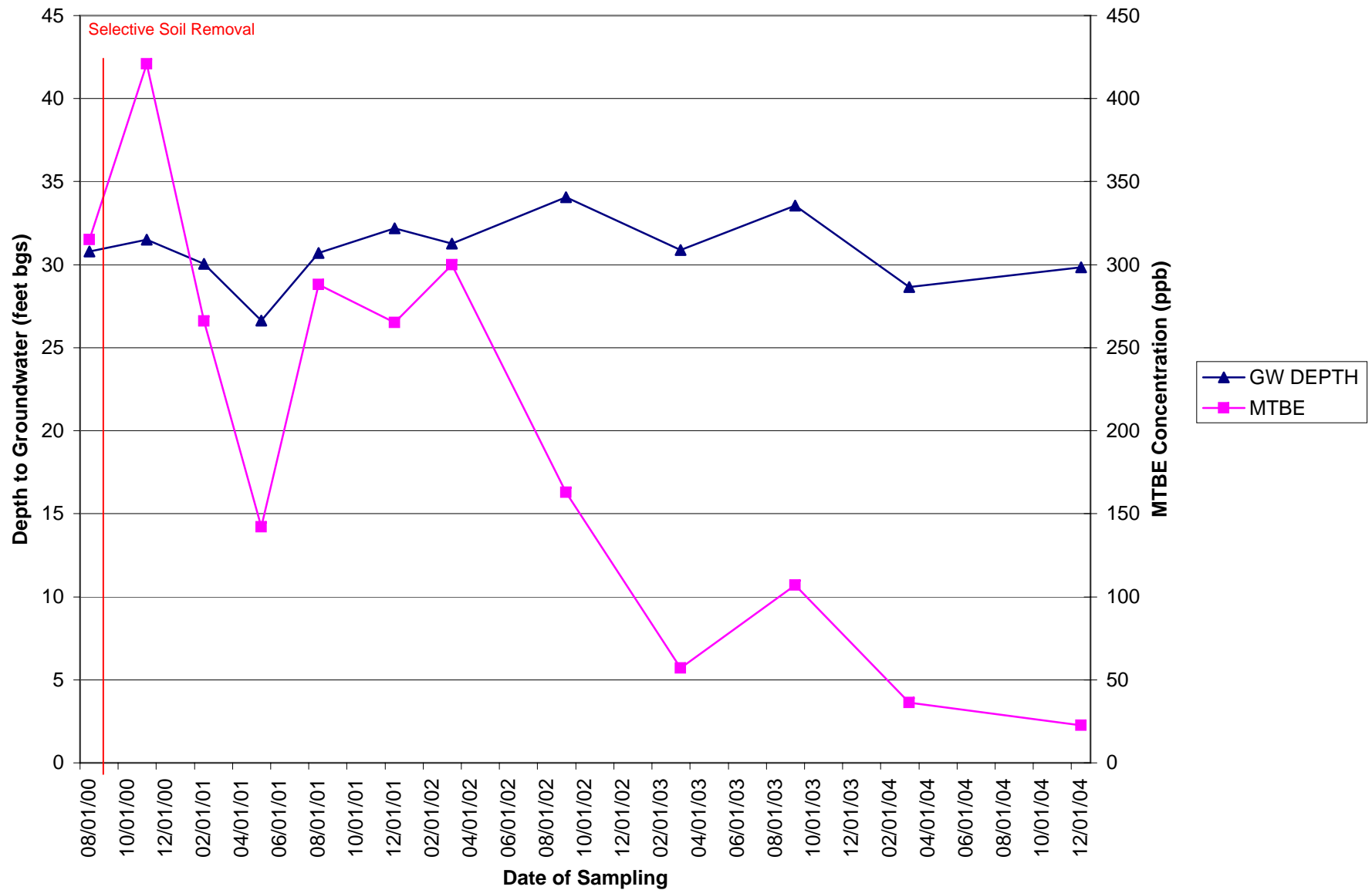
**CHART III**  
MW-3 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS



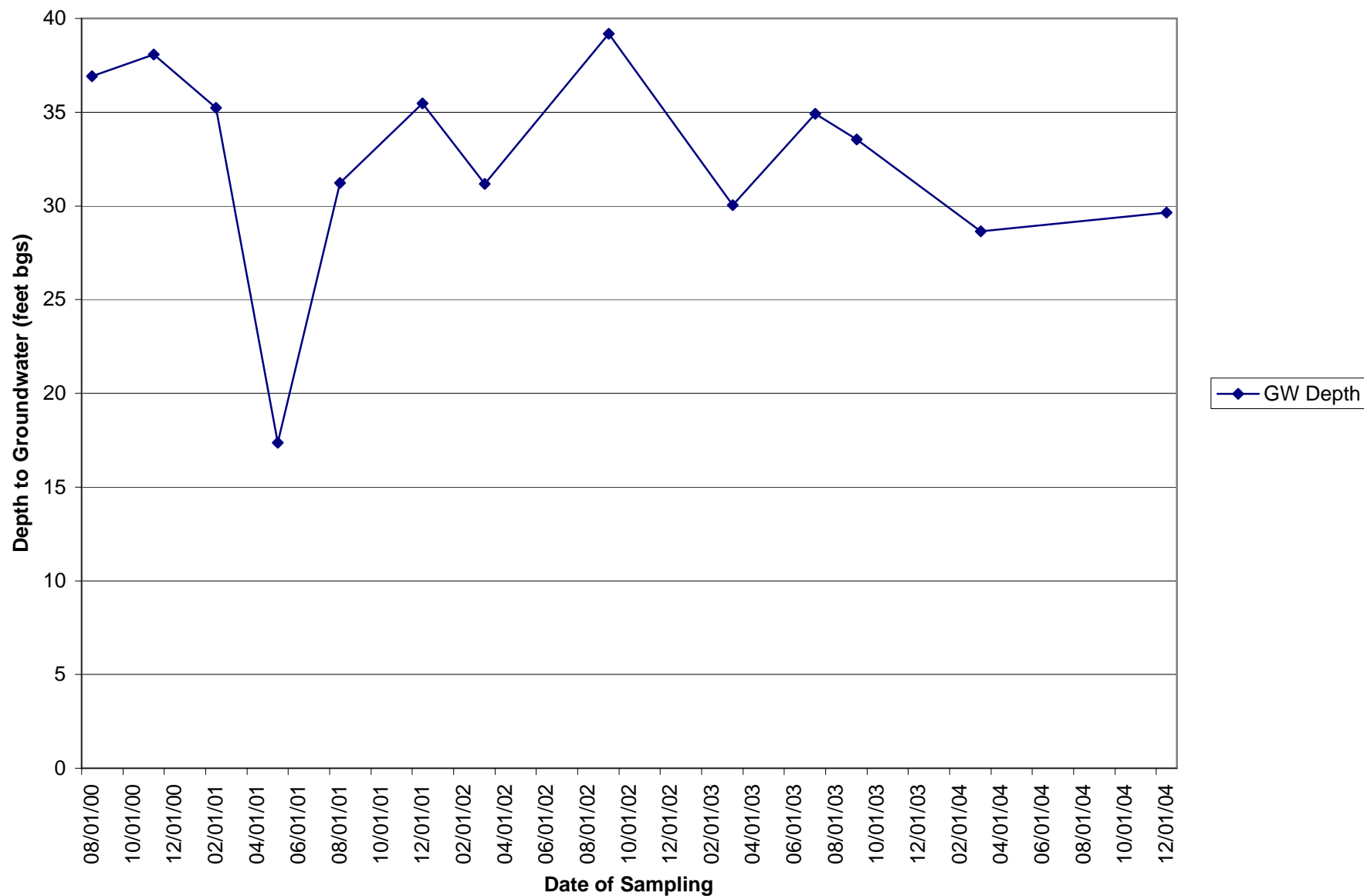
**CHART IV**  
MW-5 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS



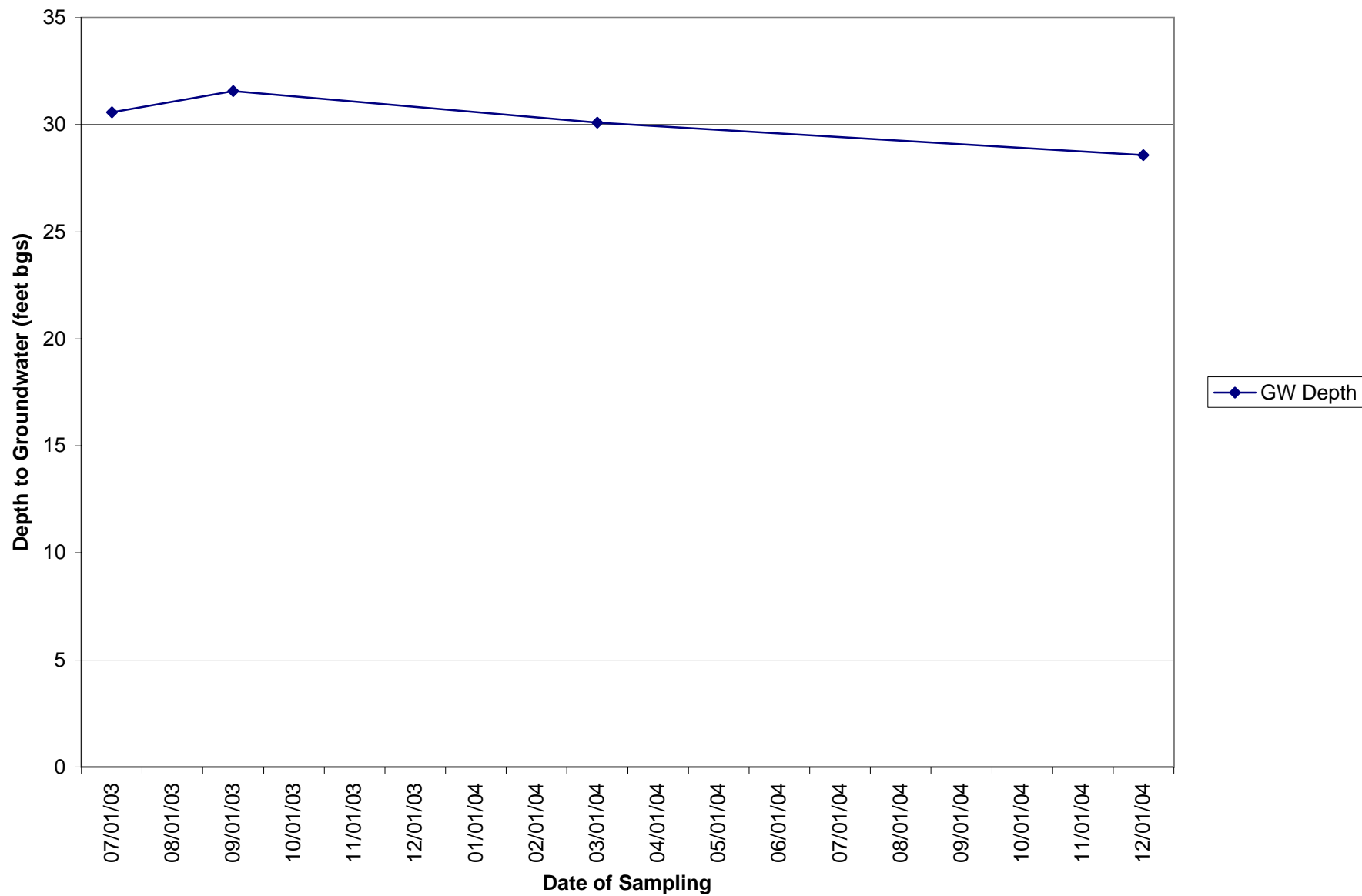
**CHART V**  
MW-6 GROUNDWATER TRENDS AND MTBE CONCENTRATIONS



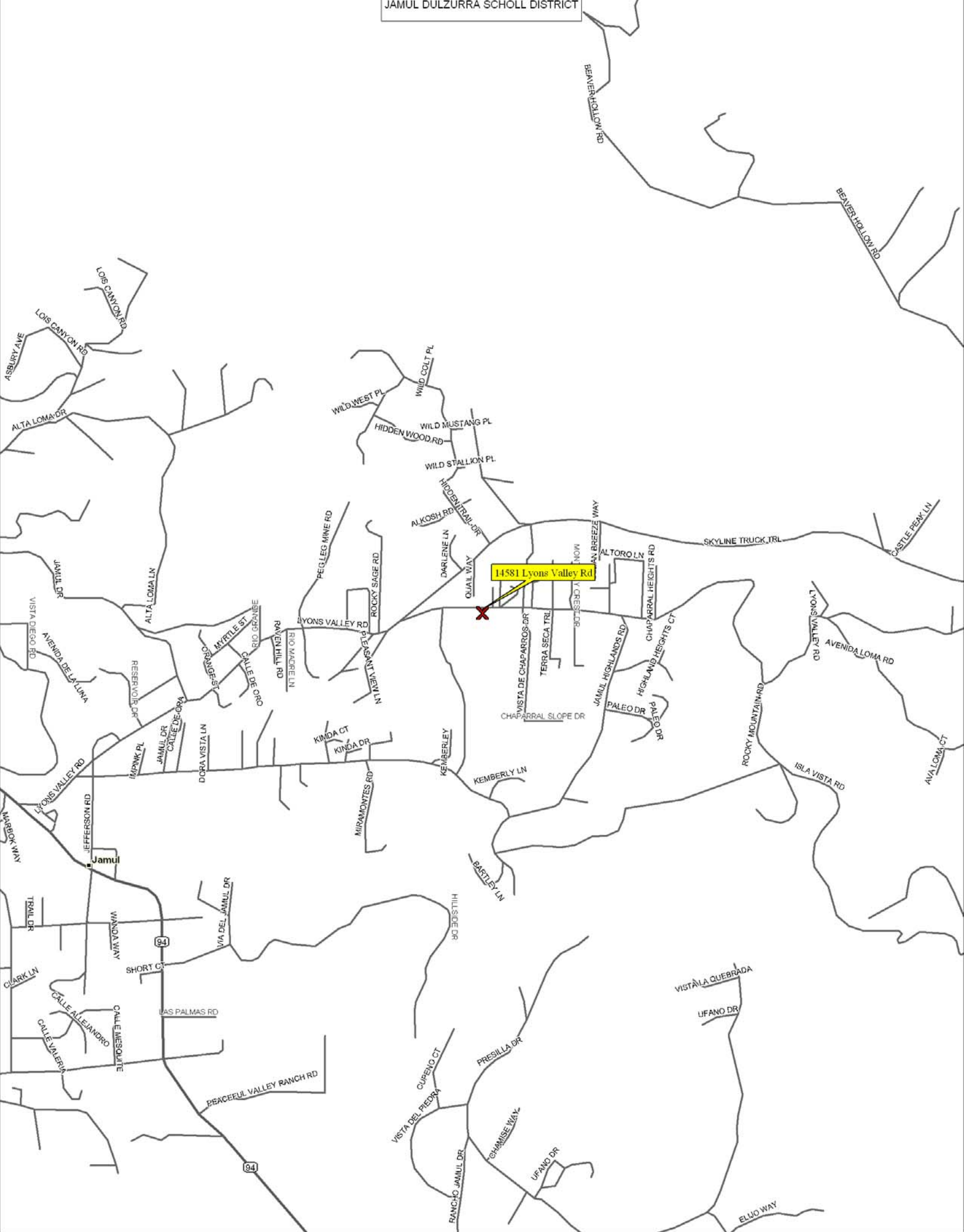
**CHART VI**  
**MW-7 GROUNDWATER TRENDS**



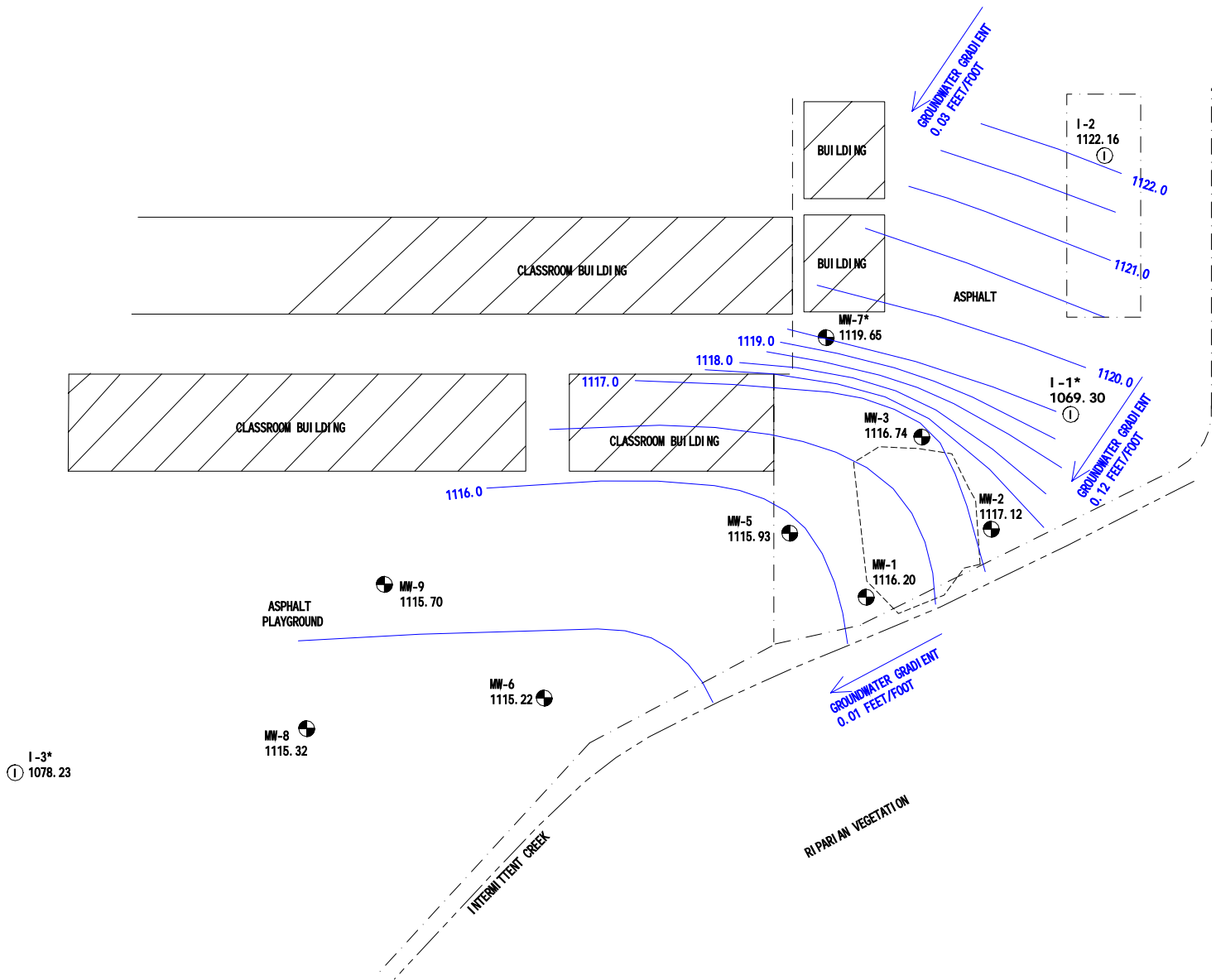
**CHART VII**  
**MW-8 GROUNDWATER TRENDS**







# JAMUL-DULZURA SCHOOL DISTRICT



## LEGEND

- MW-8 1115.32 MONITORING WELL WITH GROUNDWATER ELEVATION (FT ABOVE MEAN SEA LEVEL), MEASURED 12/9/04
- I-2 1122.16 IRRIGATION WELL WITH GROUNDWATER ELEVATION (FT ABOVE MEAN SEA LEVEL), MEASURED 12/9/04
- \* WELL NOT USED TO CALCULATE GRADIENT
- LIMITS OF SOIL EXCAVATION AUGUST 25 - SEPTEMBER 1, 2000
- - - - - FENCE
- GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (INTERVAL 0.5 FEET)

ALL DIMENSIONS AND LOCATIONS APPROXIMATE

1  
N

SCALE 1" = 50'

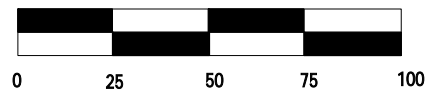
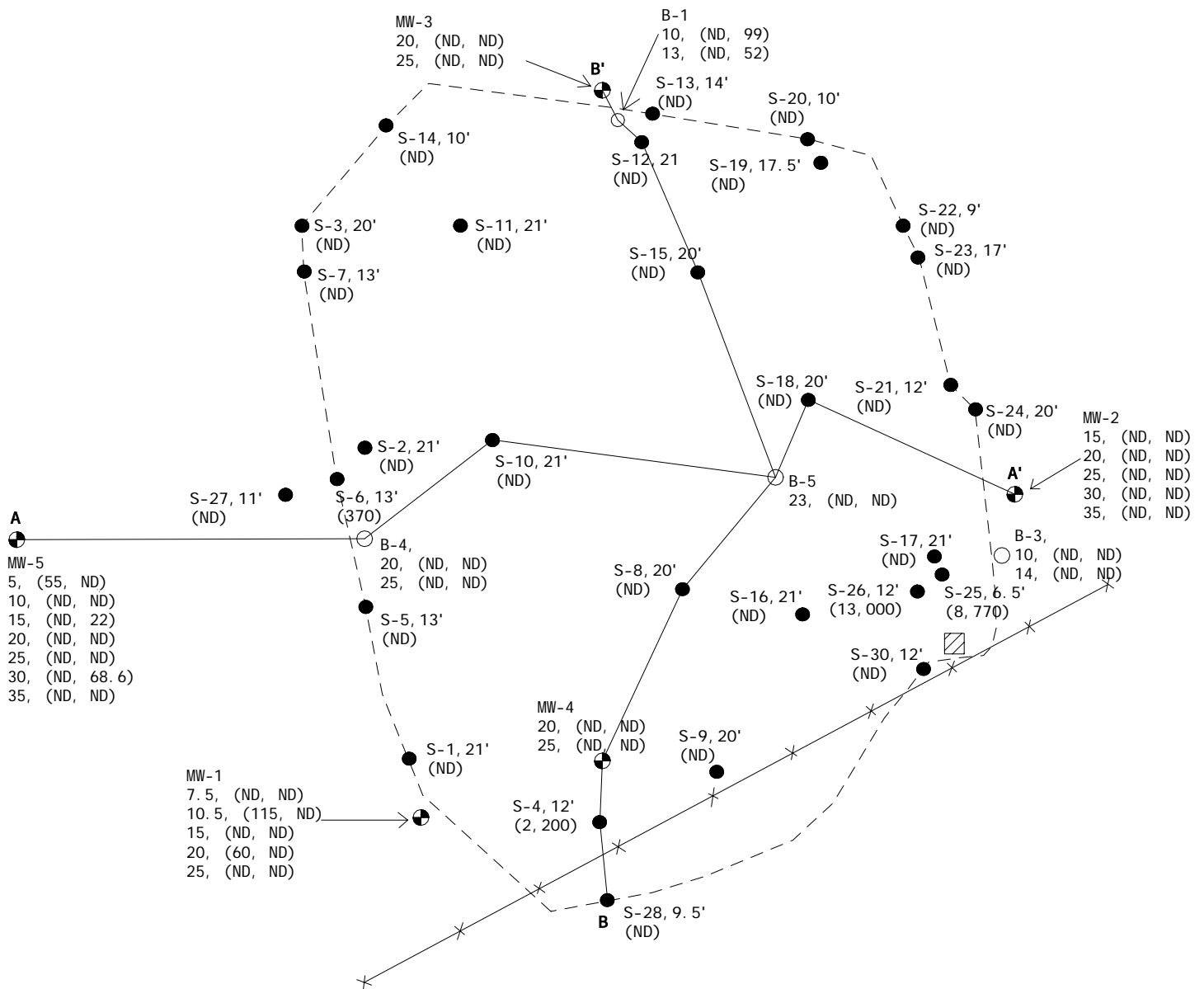


FIGURE NO. 2: SITE PLAN WITH GROUNDWATER CONDITIONS

JAMUL-DULZURA SCHOOL DISTRICT  
14581 LYONS VALLEY ROAD  
JAMUL, CALIFORNIA  
PROJECT 267.1.18

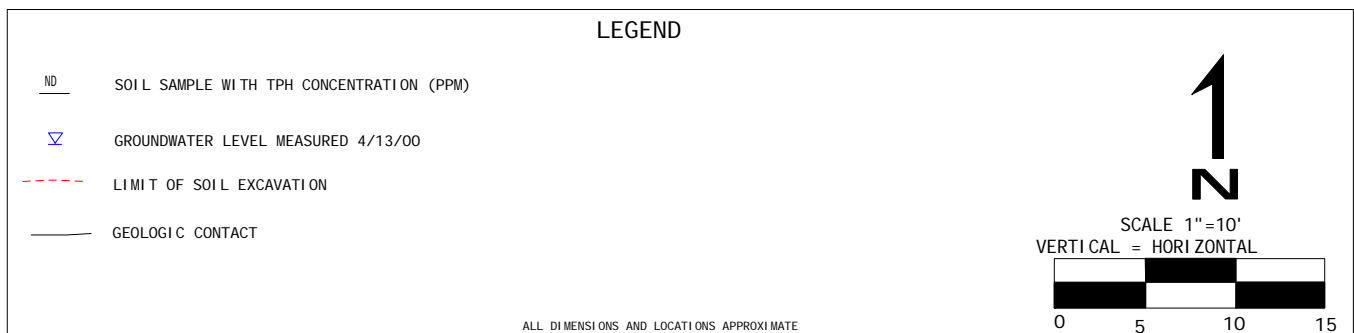
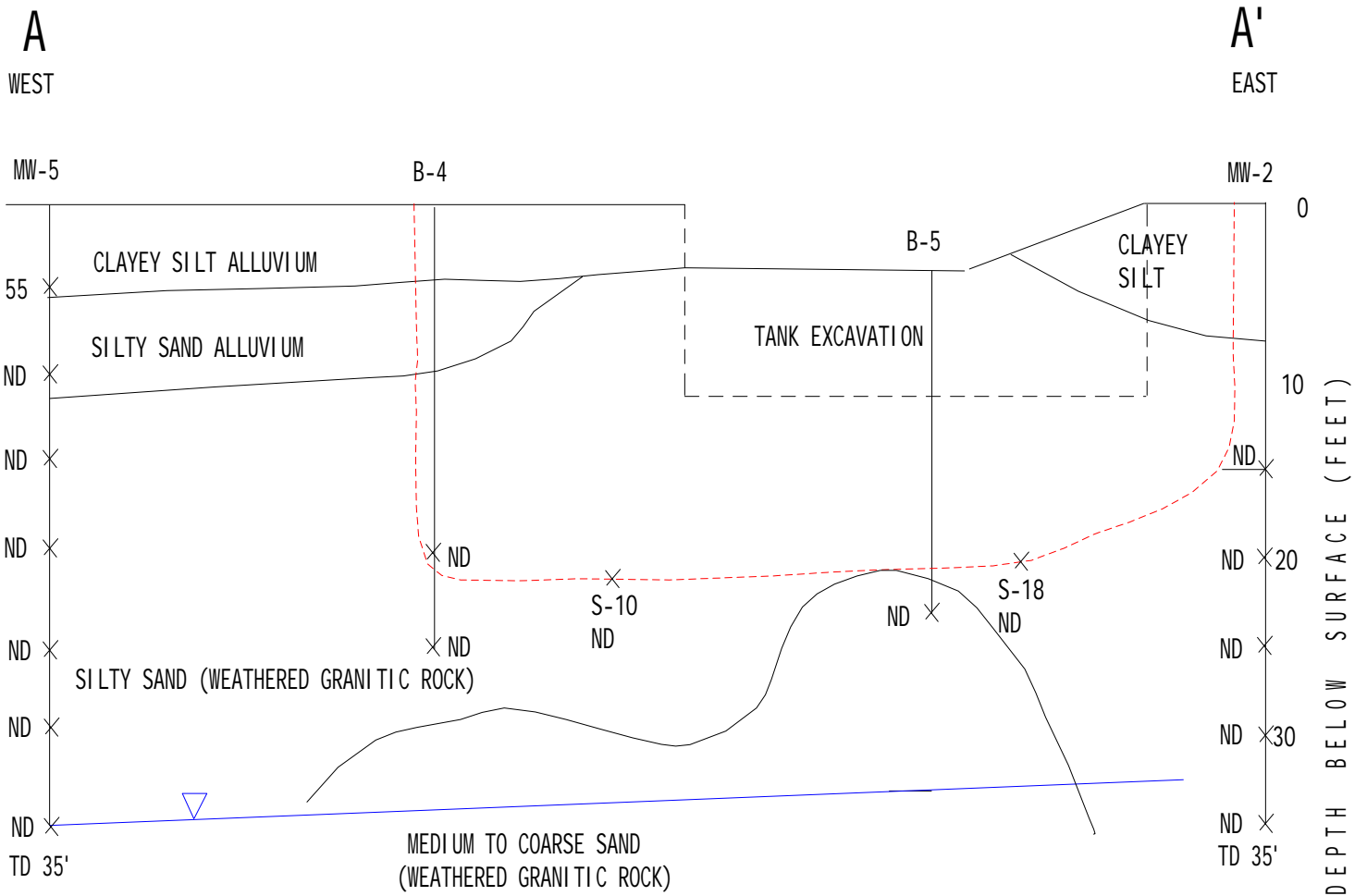
# JAMUL DULZURA SCHOOL DISTRICT



JAMUL-DULZURA SCHOOL DISTRICT  
14581 LYONS VALLEY ROAD  
JAMUL, CALIFORNIA  
PROJECT NO. 267.1.18

FIGURE NO. 3: EXCAVATION AREA

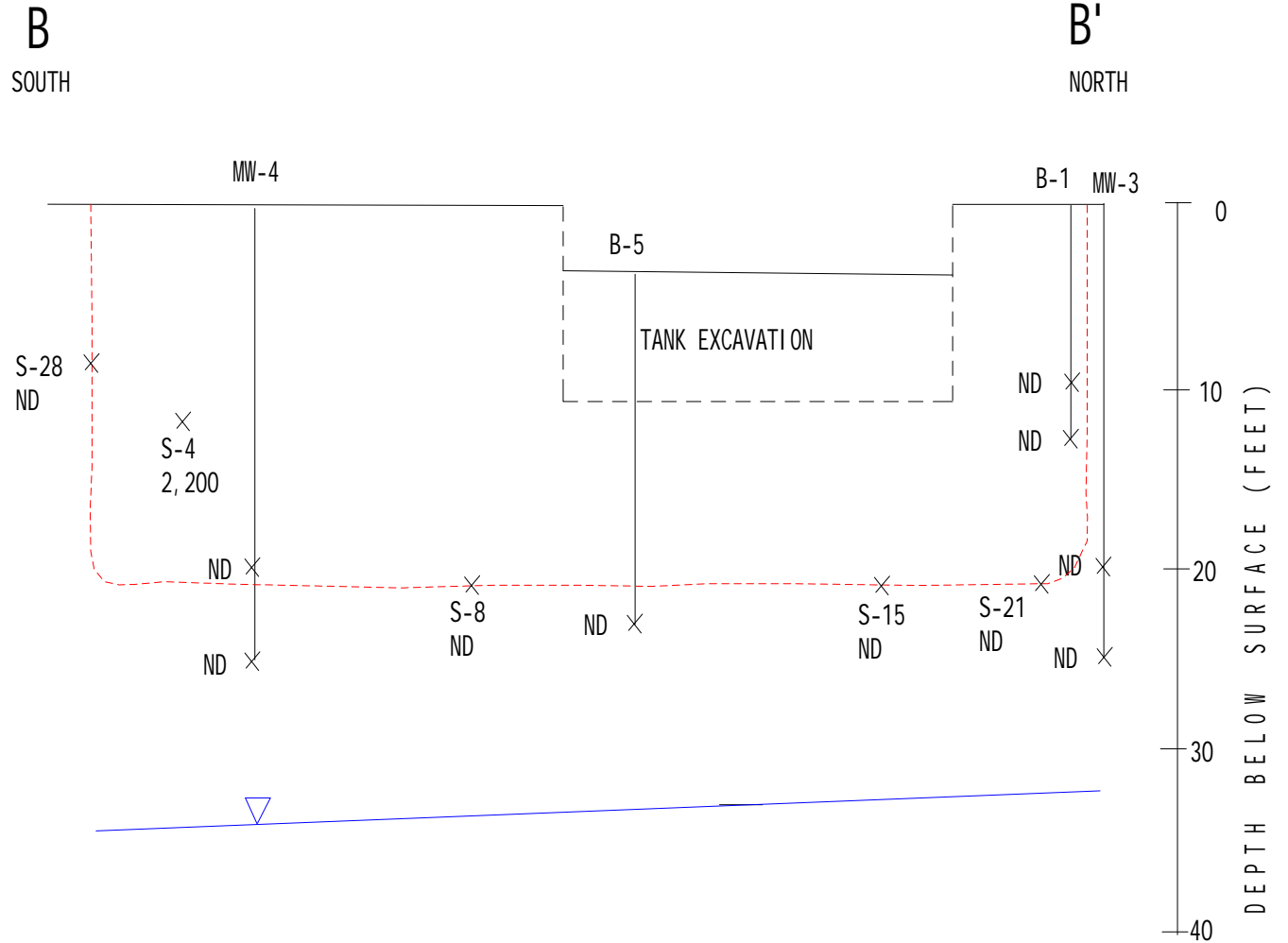
# JAMUL-DULZURA SCHOOL DISTRICT



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14581 LYONS VALLEY ROAD  
JAMUL, CALIFORNIA  
PROJECT NO. 267.1.18

FIGURE NO. 4: CROSS SECTION A-A'

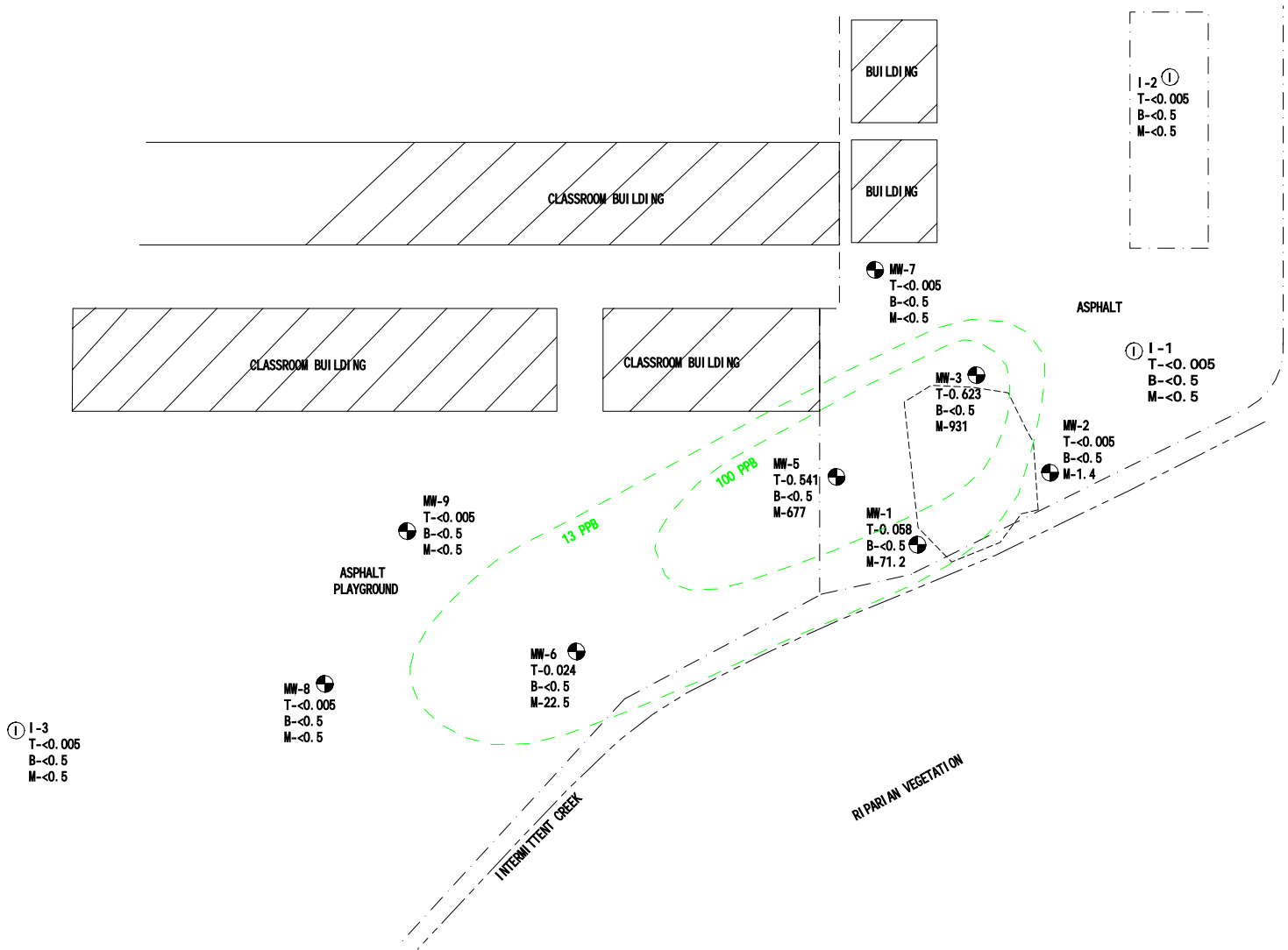
# JAMUL-DULZURA SCHOOL DISTRICT



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JAMUL, CALIFORNIA  
PROJECT NO. 267.1.18

FIGURE NO. 5: CROSS SECTION B-B'

# JAMUL-DULZURA SCHOOL DISTRICT



## LEGEND

MW-3  
T-0.623  
B-<0.5  
M-931

MONITORING WELL WITH T - TPH GASOLINE (PPM), B - BENZENE (PPB),  
M - MTBE (PPB), SAMPLED 12/9/04

I-2  
T-<0.005  
B <0.5  
M <0.5

IRRIGATION WELL WITH T - TPH GASOLINE (PPM), B - BENZENE (PPB),  
M - MTBE (PPB), SAMPLED 12/9/04

----- LIMITS OF SOIL EXCAVATION AUGUST 25 - SEPTEMBER 1, 2000

- - - - - FENCE

- - - - - MTBE CONTOUR FROM 12/9/04 GROUNDWATER SAMPLING EVENT

ALL DIMENSIONS AND LOCATIONS APPROXIMATE

1  
N

SCALE 1" = 50'



0 25 50 75 100

JAMUL-DULZURA SCHOOL DISTRICT  
14581 LYONS VALLEY ROAD  
JAMUL, CALIFORNIA  
PROJECT 267.1.18

FIGURE NO. 6: SITE PLAN WITH  
MTBE CONTOURS

DRILLING COMPANY: BAJA EXPLORATION				RIG NO: CME-75				DATE: 11-23-04							
BORING DIAMETER: 8-INCHES				DRIVE WEIGHT(S): --				DROP: --				ELEVATION: 1,145.73 (MSL)			
DEPTH (FEET)	BAG SAMPLE	JAR SAMPLE	BLOWS/FOOT	CHEM ANALYSIS		LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S.)	BORING NO. MW-9							
				LAB	FIELD										
				TPH 8015M	OVA			SOIL DESCRIPTIONS						WELL CONSTRUCTION	
				(ppm)											
0								ASPHALT: 4 INCHES						TRAFFIC RATED STEEL COVER W/ LOCKING PLUG AT SURFACE.  REDI-CRETE AND PORTLAND CEMENT MIX FOR SURFACE SEAL 0-3 FEET (4.0 CUBIC FEET).  HYDRATED GRANULAR BENTONITE 3-23 FEET (7.0 CUBIC FEET).  LONESTAR #3 SAND 23-45 FEET. (7.0 CUBIC FEET)  2-INCH DIAMETER PVC SCHED 40 CASING: SOLID 0-25 FT. ; 0.02 IN. SLOTTED 25-45 FT. FLUSH THREADED SEDIMENT CAP AT BOTTOM.  WELL DEVELOPED WITH SURGE BLOCK FOR 10 MINUTES ON 11-23-04.  WELL GAUGED ON 12-9-04. WATER LEVEL 30.03 FEET BELOW TOP OF CASING.	
								DARK BROWN SANDY SILT, SLIGHTLY DAMP							
5							ML	BROWN SILTY FINE SAND, SLIGHTLY DAMP.							
10								OLIVE BROWN SILTY FINE SAND, DENSE, DRY.							
15								SM							
20								GREY SILTY MEDIUM SAND, DAMP, VERY DENSE TO HARD, ROCK FRAGMENTS TO 20 MM, "D.G".							
25								SW							
30	▼							GREY SILTY MEDIUM SAND, VERY WET, DENSE							
35															
40															

HARGRAVE ENVIRONMENTAL CONSULTING

BORING LOG

PROJECT NO. 267.1.18

JAMUL DULZURA SCHOOL DISTRICT

FIGURE NO. 7

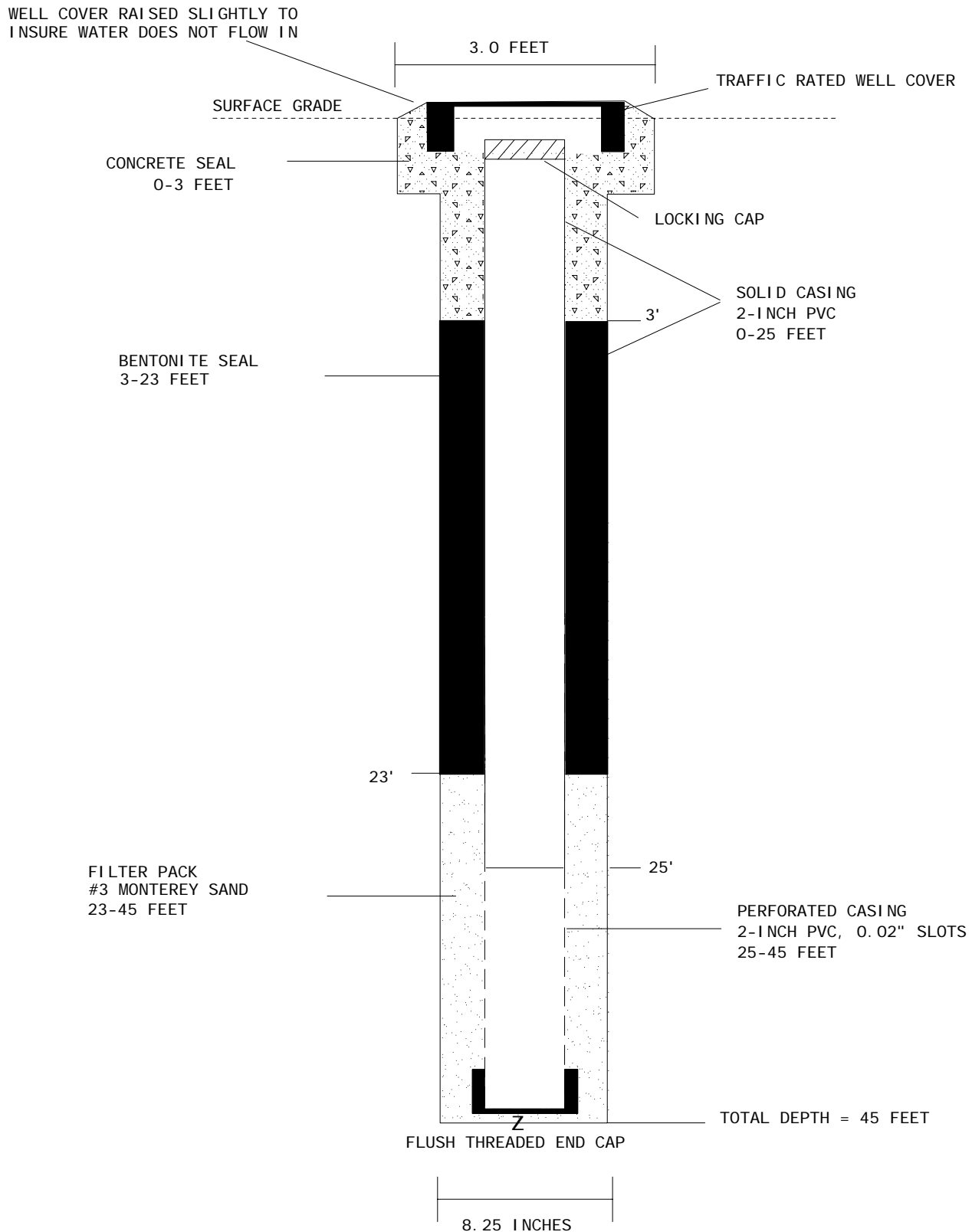
JAMULMW9a.SKF

DRILLING COMPANY:		BAJA EXPLORATION		RIG NO:		CME-75		DATE: 11-23-04			
BORING DIAMETER:		8-INCHES		DRIVE WEIGHT(S):		--		DROP: --		ELEVATION: 1,145.73 (MSL)	
DEPTH (FEET)	BAG SAMPLE	JAR SAMPLE	BLOWS/FOOT	CHEM ANALYSIS		LITHOGRAPHIC CLASS	SOIL CLASS (U.S.C.S.)	BORING NO. MW-9 (cont.)			
				LAB	FIELD						
				TPH 8015M	OVA						
				(ppm)				SOIL DESCRIPTIONS		WELL CONSTRUCTION	
40							SW				
45								TOTAL DEPTH 45 FEET. GROUNDWATER ENCOUNTERED AT 26 FEET DURING DRILLING. NO CAVING.			
50											
55											
60											
65											
70											
75											
80											
HARGRAVE ENVIRONMENTAL CONSULTING											
BORING LOG											
PROJECT NO.		267. 1. 18		JAMUL DULZURA SCHOOL DISTRICT				FIGURE NO. 7(cont.)			



# JAMUL SCHOOL DISTRICT

## MONITORING WELL MW-9



14581 LYONS VALLEY ROAD  
JAMUL, CALIFORNIA  
PROJECT NO. 267.1.18

FIGURE NO. 8:  
WELL CONSTRUCTION  
DETAIL

## **APPENDIX A**

### **WELL PURGE DATA SHEET**

WELL NO.	MW-1	MW-2	MW-3	MW-5	MW-6	MW-7	MW-8
CASING ELEVATION (FEET ABOVE MSL)	1147.37	1149.54	1149.50	1147.37	1145.07	1149.29	1143.90
DEPTH TO FREE PRODUCT (FT)	-	-	-	-	-	-	-
DEPTH TO GROUNDWATER (FT)	31.17	32.42	32.76	31.44	29.85	29.64	28.58
GROUNDWATER ELEVATION (FT)	1116.20	1117.12	1116.74	1115.93	1115.22	1119.65	1115.32
FREE PRODUCT THICKNESS (FT)	0	0	0	0	0	0	0
WELL DEPTH (FT)	44.10	44.00	46.70	34.90	39.71	39.97	43.40
GROUNDWATER THICKNESS (FT)	12.93	11.58	13.94	3.46	9.86	10.33	14.82
CASING/BOREHOLE DIAMETER (IN/IN)	2/8	2/8	2/8	2/8	2/8	2/8	2/8
WELL FACTOR USED	0.88	0.88	0.88	0.88	0.88	0.88	0.88
CALCULATED WELL VOLUME (GAL) (1.0)	11.4	10.2	12.3	3.0	8.7	9.1	13.0
'(1.5)	17.1	15.3	18.4	4.6	9.0	13.6	19.6
'(3.0)	-	-	-	-	-	-	-
DEPTH TO 80% RECOVERY	33.76	34.74	35.55	32.13	31.82	31.71	31.54
TIME PURGING STARTED	912	1245	1215	907	1000	1313	1022
STOPPED	1152	1345	1417	1300	1019	1356	1129
INITIAL VOLUME REMOVED (GAL)	11.4	10.2	12.3	3.0	8.7	9.1	13.0
INTERMEDIATE VALUES	5.7	5.1	6.1	1.5	0.3	4.5	6.5
	-	-	-	-	-	-	-
TOTAL WATER REMOVED (GAL)	17.1	15.3	18.4	4.6	9.0	13.6	19.6
TIME TO RECHARGE 80% WELL VOLUME	<2 hrs	<2 hrs	<2 hrs	<2 hrs	<2 hrs	<2 hrs	<2 hrs
FAST OR SLOW RECHARGING	Fast	Fast	Fast	Fast	Fast	Fast	Fast
TIME SAMPLES COLLECTED	1308	1445	1517	1437	1138	1435	1200
pH	7.31/7.41	6.86/6.99	7.01/6.93	7.13/7.26	7.04/7.05	6.84/6.89	7.00/7.03
TEMPERATURE (F)	73.2/74.1	71.0/72.1	70.9/71.2	72.9/73.1	74.2/73.6	72.1/72.1	73.6/71.7
TOTAL DISSOLVED SOLIDS (TDS)	2740/2700	4100/4060	3440/3450	1910/1940	2640/2530	1470/1490	2660/2540
FREQUENCY (HZ)	-	-	-	-	-	-	-
PUMPED/BAILED	Bailed	Bailed	Bailed	Bailed	Bailed	Bailed	Bailed
COMMENTS							

WELL NO.	MW-9	I-1	I-2	I-3
RIM ELEVATION (FEET MSL)	1145.73	1152.48	1155.18	1142.31
DEPTH TO FREE PRODUCT (FT)	-	-	-	-
DEPTH TO GROUNDWATER (FT)	30.03	83.18	33.02	64.08
GROUNDWATER ELEVATION (FT)	1115.70	1069.30	1122.16	1078.23
FREE PRODUCT THICKNESS (FT)	0	0	0	0
WELL DEPTH (FT)	44.00	240	80	420
GROUNDWATER THICKNESS (FT)	13.97	156.82	46.98	355.92
CASING/BOREHOLE DIAMETER (IN/IN)	2/8	-	-	-
WELL FACTOR USED	0.88	-	-	-
CALCULATED WELL VOLUME (GAL) (1.0)	12.3	-	-	-
'(1.5)	18.4	-	-	-
'(3.0)	-	-	-	-
DEPTH TO 80% RECOVERY	32.82	-	-	-
TIME PUMPING STARTED	925	1416	1416	1416
STOPPED	955	1427	1427	1427
INITIAL VOLUME REMOVED (GAL)	12.3	-	-	-
INTERMEDIATE VALUES	6.1	-	-	-
	-	-	-	-
TOTAL WATER REMOVED (GAL)	18.4	143	88	121
TIME TO RECHARGE 80% WELL VOLUME	<2 hrs	<2 hrs	<2 hrs	<2 hrs
FAST OR SLOW RECHARGING	Fast	Fast	Fast	Fast
TIME SAMPLES COLLECTED	1131	1503	1456	1509
pH	7.43/7.42	-	-	-
TEMPERATURE (F)	72.5/72.5	-	-	-
TOTAL DISSOLVED SOLIDS (TDS)	2110/2080	-	-	-
PUMPING RATE (GALLONS PER MINUTE)	-	13	8	11
PUMPED/BAILED	Bailed	Pumped	Pumped	Pumped
COMMENTS				

## **APPENDIX B**

### **NON-HAZARDOUS WASTE DISPOSAL MANIFEST**

# NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest  
Document No. 25281

2. Page 1  
of 1

3. Generator's Name and Mailing Address

JAMUL DULZURA SCHOOL  
14581 LYONS VALLEY ROAD  
JAMUL, CA 91935

4. Generator's Phone 619 465-3438

CONTACT: SONNY-SOCLARIS

5. Transporter 1 Company Name

EFR ENVIRONMENTAL SERVICES, INC.

US EPA ID Number

CAR000011205

A. Transporter's Phone

619-722-6781

7. Transporter 2 Company Name

B. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

DOVE ROCK INDUSTRIES, INC.  
3215 W. DOVE ROCK ROAD  
QUARTZSITE, AZ 85346

10. US EPA ID Number

AZR0000035915

C. Facility's Phone

928-927-7688

11. Waste Shipping Name and Description

a. NON-HAZARDOUS WASTE LIQUID

12. Containers  
No. Type

13. Total  
Quantity

14. Unit  
Wt/Vol

0030M00165

G

D. Additional Descriptions for Materials Listed Above

11A. ACCEPTANCE # 3438P1289 (PURGE WATER)

E. Handling Codes for Wastes Listed Above

11a. 01

15. Special Handling Instructions and Additional Information

ALWAYS WEAR APPROPRIATE P.P.E. AND USE SAFE HANDLING METHODS.  
24 HR. EMERGENCY NUMBER 1-800-244-1202/619-722-6781 \*EFR\*

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name

Sonny Rosen Generator

Signature

[Signature]

Month Day Year

04 09 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name

RANDY JARRETT

Signature

[Signature]

Month Day Year

04 09 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of waste materials covered by this manifest except as noted in item 19.

Printed/Typed Name

JERRY R. JARRETT

Signature

[Signature]

Month Day Year

10 4 16 04

ORIGINAL - RETURN TO GENERATOR

## **APPENDIX C**

### **ANALYTICAL LABORATORY REPORTS AND CHAIN OF CUSTODY**



## American Environmental Testing Laboratory Inc.

2843 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181  
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • [www.aetlab.com](http://www.aetlab.com)

### Ordered By

Hargrave Environmental Consulting  
8360 Clairemont Mesa Blvd. Suite 107  
San Diego, CA 92111-

Telephone: (858)268-4248  
Attention: Brian Sweet

Number of Pages 9

Date Received 12/14/2004

Date Reported 12/23/2004

Job Number	Order Date	Client
31654	12/14/2004	HARENV

Project ID: 267.1.18

Enclosed please find results of analyses of 11 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By:

Approved By:

Cyrus Razmara, Ph.D.  
Laboratory Director





# American Environmental Testing Laboratory Inc.

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## ANALYTICAL RESULTS

### Ordered By

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Telephone: (858)268-4248

Attn: Brian Sweet

Page: 2

Project ID: 267.1.18

AETL Job Number	Submitted	Client
31654	12/14/2004	HARENV

Method: 8260B, Volatile Organic Compounds (BTEX/OXYG) by GC/MS (SW846)

QC Batch No: 121504

Our Lab I.D.				Method Blank	31654.01	31654.02	31654.03	31654.04
Client Sample I.D.					MW-9	MW-6	MW-8	MW-1
Date Sampled					12/09/2004	12/09/2004	12/09/2004	12/09/2004
Date Prepared				12/14/2004	12/14/2004	12/14/2004	12/14/2004	12/14/2004
Preparation Method				5035A	5035A	5035A	5035A	5035A
Date Analyzed				12/15/2004	12/15/2004	12/15/2004	12/15/2004	12/15/2004
Matrix				Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units				ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor				1	1	1	1	1
Analytes	MDL	PQL	Results	Results	Results	Results	Results	Results
Benzene	0.5	1.0	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.5	1.0	ND	ND	ND	ND	ND	ND
Toluene (Methyl benzene)	0.5	1.0	ND	ND	ND	ND	ND	ND
o-Xylene	0.5	1.0	ND	ND	ND	ND	ND	ND
m,p-Xylenes	1.0	2.0	ND	ND	ND	ND	ND	ND
tert-Butyl alcohol (TBA)	10	50	ND	ND	ND	ND	ND	ND
Diisopropyl ether (DIPE)	0.5	1.0	ND	ND	ND	ND	ND	ND
Ethyl alcohol (Ethanol)	500	1000	ND	ND	ND	ND	ND	ND
Ethyl-tert-butyl ether (ETBE)	0.5	1.0	ND	ND	ND	ND	ND	ND
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND	22.5	ND	ND	71.2
tert-Amyl methyl ether (TAME)	0.5	1.0	ND	ND	ND	ND	ND	ND

Our Lab I.D.			31654.01	31654.02	31654.03	31654.04
Surrogates	%Rec.Limit	% Rec.	% Rec.	% Rec.	% Rec.	% Rec.
Bromofluorobenzene	75-125	107	110	117	116	121
Dibromofluoromethane	75-125	97	101	105	109	109
Toluene-d8	75-125	105	104	101	101	98



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Attn: Brian Sweet

Page: 3

Project ID: 267.1.18

AETL Job Number	Submitted	Client
31654	12/14/2004	HARENV

Method: 8260B, Volatile Organic Compounds (BTEX/OXYG) by GC/MS (SW846)

QC Batch No: 121504

Our Lab I.D.			31654.05	31654.06	31654.07	31654.08	31654.09
Client Sample I.D.			MW-7	MW-5	MW-2	I-2	I-1
Date Sampled			12/09/2004	12/09/2004	12/09/2004	12/09/2004	12/09/2004
Date Prepared			12/14/2004	12/14/2004	12/14/2004	12/14/2004	12/14/2004
Preparation Method			5035A	5035A	5035A	5035A	5035A
Date Analyzed			12/15/2004	12/15/2004	12/15/2004	12/15/2004	12/15/2004
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units			ug/L	ug/L	ug/L	ug/L	ug/L
Dilution Factor			1	1	1	1	1
Analytes	MDL	PQL	Results	Results	Results	Results	Results
Benzene	0.5	1.0	ND	ND	ND	ND	ND
Ethylbenzene	0.5	1.0	ND	ND	ND	ND	ND
Toluene (Methyl benzene)	0.5	1.0	ND	ND	ND	ND	ND
o-Xylene	0.5	1.0	ND	ND	ND	ND	ND
m,p-Xylenes	1.0	2.0	ND	ND	ND	ND	ND
tert-Butyl alcohol (TBA)	10	50	ND	17.3J	ND	ND	ND
Diisopropyl ether (DIPE)	0.5	1.0	ND	ND	ND	ND	ND
Ethyl alcohol (Ethanol)	500	1000	ND	ND	ND	ND	ND
Ethyl-tert-butyl ether (ETBE)	0.5	1.0	ND	0.7J	ND	ND	ND
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	677	1.4	ND	ND
tert-Amyl methyl ether (TAME)	0.5	1.0	ND	3.8	ND	ND	ND

Our Lab I.D.			31654.05	31654.06	31654.07	31654.08	31654.09
Surrogates	%Rec.Limit		% Rec.	% Rec.	% Rec.	% Rec.	% Rec.
Bromofluorobenzene	75-125		121	107	120	122	119
Dibromofluoromethane	75-125		111	97	119	118	124
Toluene-d8	75-125		98	105	97	94	94



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Telephone: (858)268-4248

Attn: Brian Sweet

Page: 4

Project ID: 267.1.18

AETL Job Number	Submitted	Client
31654	12/14/2004	HARENV

Method: 8260B, Volatile Organic Compounds (BTEX/OXYG) by GC/MS (SW846)

QC Batch No: 121504

Our Lab I.D.			31654.10	31654.11			
Client Sample I.D.			I-3	MW-3			
Date Sampled			12/09/2004	12/09/2004			
Date Prepared			12/14/2004	12/14/2004			
Preparation Method			5035A	5035A			
Date Analyzed			12/15/2004	12/15/2004			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes		MDL	PQL	Results	Results		
Benzene		0.5	1.0	ND	ND		
Ethylbenzene		0.5	1.0	ND	ND		
Toluene (Methyl benzene)		0.5	1.0	ND	ND		
o-Xylene		0.5	1.0	ND	ND		
m,p-Xylenes		1.0	2.0	ND	ND		
tert-Butyl alcohol (TBA)		10	50	ND	ND		
Diisopropyl ether (DIPE)		0.5	1.0	ND	ND		
Ethyl alcohol (Ethanol)		500	1000	ND	ND		
Ethyl-tert-butyl ether (ETBE)		0.5	1.0	ND	1.2		
Methyl-tert-butyl ether (MTBE)		0.5	1.0	ND	931		
tert-Amyl methyl ether (TAME)		0.5	1.0	ND	8.1		

Our Lab I.D.			31654.10	31654.11			
Surrogates	%Rec.Limit		% Rec.	% Rec.			
Bromofluorobenzene	75-125		118	121			
Dibromofluoromethane	75-125		123	122			
Toluene-d8	75-125		93	93			



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Attn: Brian Sweet

Page: 5

Project ID: 267.1.18

AETL Job Number	Submitted	Client
31654	12/14/2004	HARENV

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID

QC Batch No: 121404

Our Lab I.D.		Method Blank	31654.01	31654.02	31654.03	31654.04
Client Sample I.D.			MW-9	MW-6	MW-8	MW-1
Date Sampled			12/09/2004	12/09/2004	12/09/2004	12/09/2004
Date Prepared		12/14/2004	12/14/2004	12/14/2004	12/14/2004	12/14/2004
Preparation Method		5035A	5035A	5035A	5035A	5035A
Date Analyzed		12/14/2004	12/14/2004	12/14/2004	12/14/2004	12/14/2004
Matrix		Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units		mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor		1	1	1	1	1
Analytes	MDL	PQL	Results	Results	Results	Results
TPH as Gasoline and Light HC. (C4-C12)	0.005	0.010	ND	ND	0.024	0.058

Our Lab I.D.			31654.01	31654.02	31654.03	31654.04
Surrogates	%Rec.Limit	% Rec.	% Rec.	% Rec.	% Rec.	% Rec.
Bromofluorobenzene	75-125	101	108	108	109	102



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Page: 6

Project ID: 267.1.18

AETL Job Number	Submitted	Client
31654	12/14/2004	HARENV

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID

QC Batch No: 121404

Our Lab I.D.		31654.05	31654.06	31654.07	31654.08	31654.09
Client Sample I.D.		MW-7	MW-5	MW-2	I-2	I-1
Date Sampled		12/09/2004	12/09/2004	12/09/2004	12/09/2004	12/09/2004
Date Prepared		12/14/2004	12/14/2004	12/14/2004	12/14/2004	12/14/2004
Preparation Method		5035A	5035A	5035A	5035A	5035A
Date Analyzed		12/14/2004	12/14/2004	12/14/2004	12/14/2004	12/14/2004
Matrix		Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units		mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor		1	1	1	1	1
Analytes	MDL	PQL	Results	Results	Results	Results
TPH as Gasoline and Light HC. (C4-C12)	0.005	0.010	ND	0.541	ND	ND

Our Lab I.D.		31654.05	31654.06	31654.07	31654.08	31654.09
Surrogates	%Rec.Limit	% Rec.	% Rec.	% Rec.	% Rec.	% Rec.
Bromofluorobenzene	75-125	109	101	100	104	105



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Attn: Brian Sweet

Page: 7

Project ID: 267.1.18

AETL Job Number	Submitted	Client
31654	12/14/2004	HARENV

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID

QC Batch No: 121404

Our Lab I.D.			31654.10	31654.11			
Client Sample I.D.			I-3	MW-3			
Date Sampled			12/09/2004	12/09/2004			
Date Prepared			12/14/2004	12/14/2004			
Preparation Method			5035A	5035A			
Date Analyzed			12/14/2004	12/14/2004			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes		MDL	PQL	Results	Results		
TPH as Gasoline and Light HC. (C4-C12)		0.005	0.010	ND	0.623		

Our Lab I.D.			31654.10	31654.11			
Surrogates	%Rec.Limit		% Rec.	% Rec.			
Bromofluorobenzene	75-125		104	102			



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Attn: Brian Sweet

Page: 8

Project ID: 267.1.18

AETL Job Number	Submitted	Client
31654	12/14/2004	HARENV

Method: 8260B, Volatile Organic Compounds (BTEX/OXYG) by GC/MS (SW846)

## QUALITY CONTROL REPORT

QC Batch No: 121504 Sample Spiked: SB121504 QC Prepared: 12/15/2004 QC Analyzed: 12/15/2004

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Benzene	0.0	50.00	46.50	93	50.00	45.50	91	2.2	75-125	<20
Toluene (Methyl benzene)	0.0	50.00	44.50	89	50.00	45.00	90	1.1	75-125	<20
Methyl-tert-butyl ether (MTBE)	0.0	50.00	58.50	117	50.00	60.00	120	2.5	75-125	<20
Chlorobenzene	0.0	50.00	44.50	89	50.00	45.00	90	1.1	75-125	<20
1,1-Dichloroethene	0.0	50.00	53.00	106	50.00	52.50	105	<1	75-125	<20
Trichloroethene	0.0	50.00	56.50	113	50.00	51.00	102	10.2	75-125	<20

QC Batch No: 121504 Sample Spiked: SB121504 QC Prepared: 12/15/2004 QC Analyzed: 12/15/2004

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Benzene	50.00	41.00	82	75-125						
Toluene (Methyl benzene)	50.00	48.50	97	75-125						
Methyl-tert-butyl ether (MTBE)	50.00	50.50	101	75-125						
Chlorobenzene	50.00	47.50	95	75-125						
1,1-Dichloroethene	50.00	41.00	82	75-125						
Trichloroethene	50.00	41.00	82	75-125						
LCS										
Chloroform (Trichloromethane)	50.00	52.50	105	75-125						
Ethylbenzene	50.00	51.50	103	75-125						
1,1,1-Trichloroethane	50.00	51.00	102	75-125						
o-Xylene	50.00	50.00	100	75-125						
m,p-Xylenes	100.00	98.00	98	75-125						



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Attn: Brian Sweet

Page: 9

Project ID: 267.1.18

AETL Job Number	Submitted	Client
31654	12/14/2004	HARENV

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID

### QUALITY CONTROL REPORT

QC Batch No: 121404 Sample Spiked: SA121404 QC Prepared: 12/14/2004 QC Analyzed: 12/14/2004

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
TPH as Gasoline and Light HC. (C4-C12)	0.0	0.50	0.59	117	0.50	0.56	112	4.4	75-125	<20

QC Batch No: 121404 Sample Spiked: SA121404 QC Prepared: 12/14/2004 QC Analyzed: 12/14/2004

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
TPH as Gasoline and Light HC. (C4-C12)	0.50	0.54	107	75-125						



## **APPENDIX D**

### **WELL SURVEY REPORT**

<b>SITE NAME:</b> JAMUL-DULZURA SCHOOL DISTRICT		<b>SURVEY DATE:</b> 03/29/02 12/04/02 Resurvey of Mwells 1,2 & 3 and **08/05/03 add MWELL 8 # 12/15/04 Mwell9	
<b>SITE ADDRESS:</b> 14581 Lyons Valley Rd., Jamul <b>THOMAS BROS:</b> 1251-F5		<b>SURVEY METHOD:</b> Conventional and GPS (CGPS)	

<b>GPS EQUIPMENT:</b> Ashtech Z-Surveyor (AZS)	<b>TOTAL STATION:</b> SOKKIA SET 4110
---	---------------------------------------

<b>ACCURACY:</b> Horizontal and Vertical: 30 cm	
<b>WELL NUMBER</b>	<b>NAD83 (CA-ZONE6)</b> <b>DECIMAL DEG.</b> <b>ELEVATION DATUM:</b> NAVD88 <b>ELEVATION METHOD:</b> TRIG (CGPS)

	LATITUDE	LONGITUDE	RIM/GROUND ELEV.	PVC ELEVATION
*MWELL-1	32.7287941 deg.	116.8517569 deg.	*1147.753	*1147.37
*MWELL-2	32.7288737 deg.	116.8516091 deg.	*1150.102	*1149.539
*MWELL-3	32.7289308 deg.	116.8516995 deg.	*1149.847	*1149.504
MWELL-5	32.7288316 deg.	116.8518486 deg.	1147.66	1147.37
MWELL-6	32.7286780 deg.	116.8521178 deg.	1145.62	1145.07
MWELL-7	32.7290378 deg.	116.8517988 deg.	1149.73	1149.29
**MWELL-8	32.7286516 deg.	116.8523504 deg.	1144.28	1143.90
# MWELL-9	32.7287685 deg.	116.8522822 deg.	1146.28	1145.73
I-WELL-1	32.7289503 deg.	116.8515211 deg.	1152.48	x
I-WELL-2	32.7291789 deg.	116.8515205 deg.	1155.18	x
I-WELL-3	32.7286173 deg.	116.8526335 deg.	1142.31	X

\* Elevations of New Deeper Wells As re-surveyed on 12/04/02

<b>SURVEY PERFORMED FOR:</b> HARGRAVE ENVIRONMENTAL CONSULTING INC. 8360 Clairmont Mesa Boulevard, Suite 107 San Diego, CA 92111 Phone (619)268-4248 Fax (619)268-4528	<b>SURVEY PERFORMED BY:</b> Jaime A. Taynor, C.L.S. 7130, Exp. 12-31-06  Hirsch & Company 4499 Ruffin Road San Diego, CA 92123 Phone (858)565-4545 Fax (858)565-4547
--	--